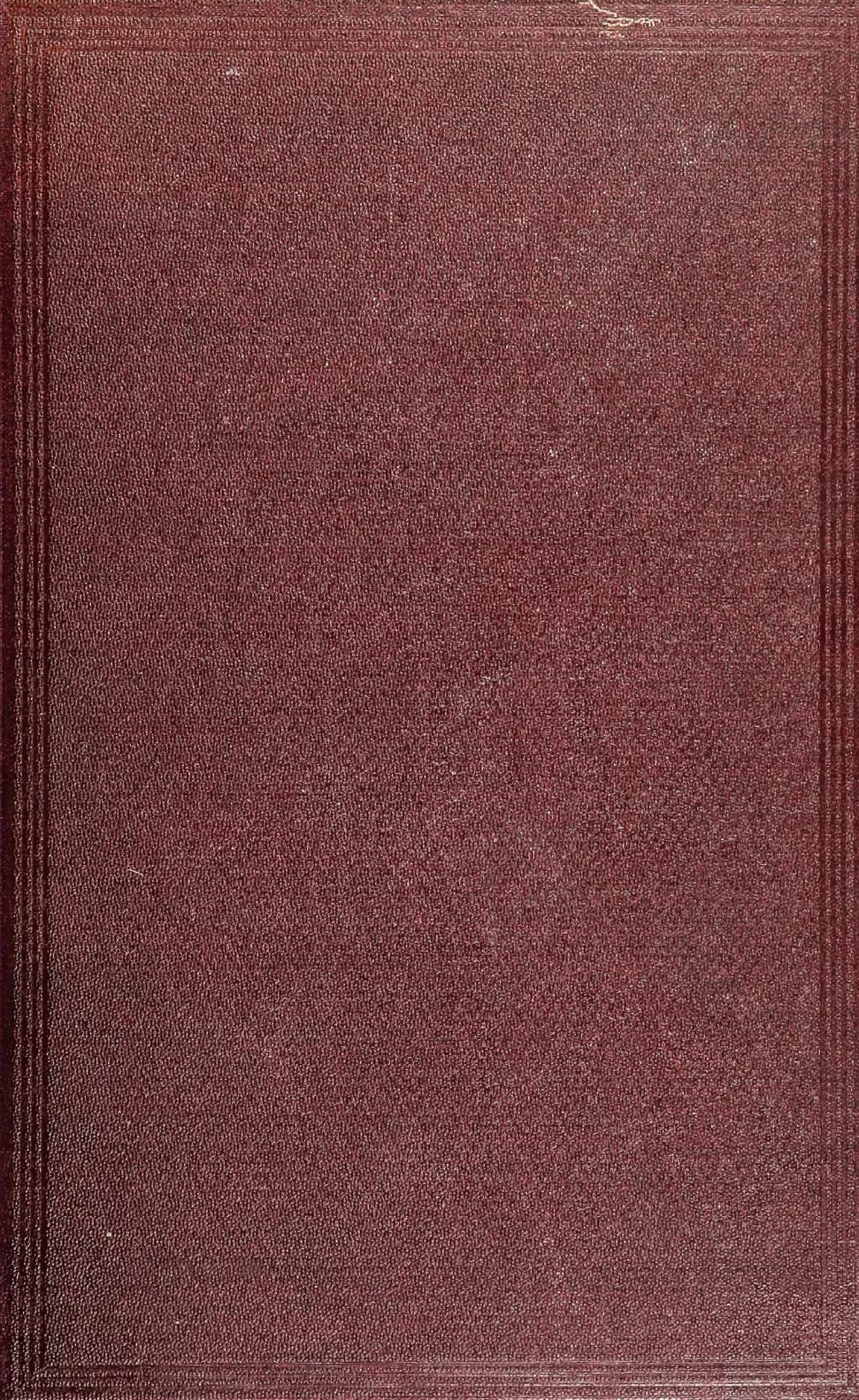




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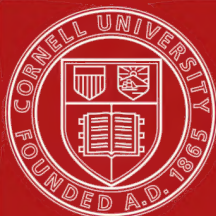
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GLEANINGS

FROM

A LITERARY LIFE.

BY THE SAME AUTHOR.

MODERN PHILOSOPHY,
FROM DESCARTES TO SCHOPENHAUER AND HARTMANN.

AMERICAN POLITICAL ECONOMY:
INCLUDING STRICTURES ON THE MANAGEMENT OF THE
CURRENCY AND THE FINANCES SINCE 1861.

*** Sent, post-paid, on receipt of price by the Publishers,*

CHARLES SCRIBNER'S SONS,
743 AND 745 BROADWAY, NEW YORK.

GLEANINGS

FROM

A LITERARY LIFE

1838-1880

BY

FRANCIS BOWEN, LL. D.

ALFORD PROFESSOR OF PHILOSOPHY IN HARVARD COLLEGE

“La littérature n’a jamais été son but, mais son moyen ”

NEW YORK
CHARLES SCRIBNER'S SONS

743 AND 745 BROADWAY

1880

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RIVERSIDE, CAMBRIDGE:
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H. O. HOUGHTON AND COMPANY.

PREFACE.

THE contents of this volume have been gleaned from a wide field. They have been selected from a much larger number of miscellaneous papers, and are here brought together as having some unity of purpose, devoted as they are to the exposition and defence of doctrines which seem to me of priceless interest and importance. They were not meant to set forth novel opinions, or any mode of thought or system of belief here first propounded, but to guard and inculcate some of the old and familiar truths which are the best portion of the heritage which we have received from former generations. They express the earnest and persistent convictions of the writer upon topics of great moment, which still so far occupy the minds of all thoughtful persons as to appear foremost among what may be called the burning questions of the day. Literature is not in its highest vocation when it is cultivated merely for its own sake, but only when used as a means of promoting other and nobler ends than those of a purely literary character.

A few of these papers are here printed for the first

time. Others had been in print, but can hardly be said to have been published. The larger number of them are taken from the different periodicals in which they have appeared during the last forty years.

The Essay upon Classical and Utilitarian Studies is an attempt to prove that the proper end and aim of the higher education, which is sought within the walls of a University or a College, is not to impart useful information, which is best obtained from Scientific, Technical, and Professional Schools, but to develop the intellect and form the character by those "liberal studies" and scholastic exercises for the promotion of which Universities were first instituted. The papers upon Political Economy are almost exclusively devoted to pointing out the serious evils which menace the peace of society and the safety of property and trade, through tampering with the standard of value and the public credit by reckless experiments with the currency, and by permitting the enormous increase of national and municipal debt which has marked the financial history of the civilized world during the present century.

But most of the Essays in this volume are upon philosophical subjects, and may be regarded as a supplement to the volume published three years ago upon "Modern Philosophy, from Descartes to Schopenhauer and Hartmann." They were intended to expose and refute those doctrines of materialism and fatalism, of agnosticism and pessimism, which have been imported into America from England and Germany, where they have usurped the name and garb of biological and

physical science. But for the undue *prestige* which is attached in this country to opinions and reputations of European origin, these theories would not have acquired here the popularity and influence which they actually possess. The hypothesis, for it is nothing more, of the evolution of all things out of chaotic dirt, through powers and agencies necessarily inherent and immanent in that dirt, unhelped and unguided anywhere by an organizing Mind, is too monstrous a doctrine ever to be entertained by competent thinkers. It teaches "the essential bestiality" of man, and if generally accepted, it would destroy all the finer qualities of his nature and condition, and reduce him again to what it claims to have been his primitive state, — at first, a brother to the insensate clod, and then a beast. I have argued strenuously against these infidel speculations, because I believe them to be as baseless as they are injurious. The upholders of them are not only at war with all morality and religion, but they are also, though for the most part unconsciously, attacking those institutions of property, the family, and the state, on which the whole fabric of modern civilization is based. I have controverted them because not only the consequences of their doctrines are pernicious, but their method is misleading and unsound; because their inferences conflict with all sound reasoning and faithfully observed facts; because their science is unscientific and their philosophy is unphilosophical. In these respects, what I have fully believed, and earnestly though imperfectly attempted to teach, during the last forty years, is set forth in these Essays. If the arguments

contained in them fail to impart to others the entire and trustful conviction which they have created in my own mind, the fault is not in the cause, but in the advocate.

HARVARD COLLEGE, *September* 10, 1880.

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CLASSICAL AND UTILITARIAN STUDIES.

PREFATORY NOTE ON THE CONTEST BETWEEN THE ANCIENTS AND THE MODERNS.

THE warfare of the moderns against the ancients, as it was called, which raged so fiercely in the French Academy during the latter part of the seventeenth century, was immediately carried over by St. Evremond into England, and there caused the celebrated "battle of the books." Sir William Temple and William Wotton became the chief participants in the fray on English ground, the contest between these two leading ultimately to the memorable discussion between Bentley and Boyle. Then the controversy slumbered so long that it seemed to have died out and to be forgotten by the learned; but the embers still glowed under the ashes, and the dispute broke out afresh in our own day, of all places in the world, within the usually quiet precincts of the American Academy. We fought over what was, in the main, the same ground, though the recent discussion arose under new circumstances and had a different purpose in view. In the former case, the question was a purely literary one; it concerned the relative merits of the ancients and the moderns considered merely as guides to taste and models for imitation. In the latter case, the dispute turned upon the educational value of the Greek and Roman classics, the question being whether they ought to retain the preëminent place which they had so long held in our higher schools and universities. We did not ask, as the French and English had done before us, whether the moderns had not equalled, or even surpassed, the ancients in poetry, philosophy, eloquence, and history; but whether physical science and the useful practical arts had not made so much progress that they ought to crowd out the classics as topics of instruction and means of discipline in our highest seminaries of learning.

Those who began the contest in France, and who were the acknowledged leaders in the assault upon the reputation of the ancients, were the brothers Perrault, one of whom was the architect of the Louvre; and among their active supporters were Desmarets, Thomas Corneille, Fontenelle, and La Motte. On the other side, there was a far greater array of distinguished names, embracing most of the great writers of the Augustan age of French literature, the age of Louis XIV. Boileau was the veteran in command, and while he led the van in the conflict, he was eagerly followed by Racine, Fénelon, La Fontaine, La Bruyère, Dacier, and his accomplished wife, the translator of Homer. Charles Perrault followed up the attack, which had been commenced by his elder brothers and Desmarets, in an elaborate work, written with much wit and eloquence, but with defective erudition, which he entitled "A Parallel between the Ancients and the Moderns." Boileau retorted with a shower of epigrams, one of which I have placed as a motto at the head of the following paper. Finding that this discharge of small arms did not produce enough effect, he published a translation of Longinus on the Sublime, to which he appended "critical reflections" at great length, containing a savage personal attack upon his antagonist, and a merciless exposure of his literary blunders and the absurdity of his principles of taste. Racine followed up the blow with a long preface to his tragedy of "Iphigénie," in which he soundly rated the opposite party for their ignorance and presumption, and their imperfect appreciation of the master-pieces of ancient art. I cannot follow the history of the controversy farther, as it was prolonged for about half a century, and the literature of the subject is considerable. The whole forms a curious episode in the early history of the French Academy.

The parties to the discussion in the American Academy certainly kept their tempers better than their French predecessors did, and aimed to treat each other with perfect good humor and courtesy. Dr. Jacob Bigelow, who had been president of the Academy for several years, and who, like the elder Perrault, was equally distinguished as a physician, an architect, a scholar, and a wit, began the debate by a lively and ingenious paper, which he read at the meeting held on the

20th of December, 1866. My reply, a defence of Classical Studies as a means of education, was read at the next subsequent meeting, and is here virtually published for the first time, though a few copies of it were printed in 1867 for private distribution. In an address delivered at the opening of the Massachusetts Institute of Technology, November 16, 1865, Dr. Bigelow had made another vigorous plea for the moderns against the ancients; and this address, together with the paper which he read before the Academy, were published by him, in 1867, in a volume entitled "Modern Inquiries." The experiment of substituting utilitarian for classical studies in the higher education was thus ably advocated; and it was fairly tried, first, by the establishment of the Scientific School in Harvard College, and secondly, by the foundation of this Institute of Technology. The result of the experiment thus made may be said to have given the victory to the advocates of Classical Studies; for neither of these two institutions has justified the hopes of its founders. And the Agricultural School at Amherst, established on a similar plan and liberally supported by the State, has recently been declared to be a total failure. I believe it is now generally admitted by all competent persons who have watched the results of the trials thus made, that what is properly called a liberal education cannot be built up, even in this democratic country, on any other basis than a thorough study of mathematics and of the Latin and Greek classics.

If the study of the ancient authors should ever decline and die out in this country, it will be the classical teachers' own fault. The calamity will be due to their ill-judged and tasteless substitution of grammatical subtleties and needless philological refinements for the generous and attractive study of classical literature and art, and to the consequent disgust with which they have compelled their pupils to regard the whole subject. Hence, to this plea in behalf of Classical Studies, I have added in an Appendix an earnest protest against the abuse of the study of grammar. If there be not a complete reformation of the practice of our teachers in this respect, the advocates of utilitarian studies must ultimately win an easy triumph.

CLASSICAL AND UTILITARIAN STUDIES.

A PAPER READ BEFORE THE AMERICAN ACADEMY OF ARTS AND SCIENCES,
FEBRUARY 26, 1867.

“Clio vint, l'autre jour, se plaindre au dieu des vers
Qu'en certain lieu de l'univers,
On traitait d'auteurs froids, de poètes stériles,
Les Homères et les Virgiles.
'Cela ne saurait être ; on s'est moqué de vous,'
Reprit Apollon en courroux.
'Où peut-on avoir dit une telle infamie ?
Est-ce chez les Hurons, chez les Topinambous ?' —
C'est à Paris. — 'C'est donc dans l'hôpital des fous ?'
Non ; c'est au Louvre, en pleine Académie.”

BOILEAU.

It may reasonably be doubted whether education is a legitimate topic for investigation and discussion by this Academy. And yet it is both a science and an art ; a science of definite principles, well-organized methods, and demonstrable results ; and an art of measureless practical importance. However this may be, the question is no longer an open one, but has been decided for us by the authority of our venerable ex-President, who, at one of our recent meetings, read an elaborate essay, which he has since published, on “Classical and Utilitarian Studies.” That essay, learned, witty, and ingenious, as everything is which comes from his pen, is further remarkable because it is written by an excellent classical scholar, and contains a sweeping condemnation of Classical Studies, especially when used as an organon of education. As Dr. Bigelow has forgotten more Greek than most of us ever learned, he will pardon me for saying that he has indirectly and unconsciously refuted himself ; since his paper, as appears from the very face of it, could not have been written except by a proficient in the very studies which it condemns. And this essay has gone forth to the world, not only with all the weight of authority which belongs to its authorship, but with the implied sanction

of this Academy, if some voice, however feeble, be not here raised to controvert the doctrine which it teaches.

And what is this doctrine? Speaking briefly, it is, that this bustling and practical age in which we live,—this age of steam-engines, railroads, gas-lights, and Atlantic telegraphs, when the physical sciences are growing with a rapidity that takes away one's breath, and startling us with new wonders every day,—has no time or thought to waste on dead languages, obsolete sciences, or works of literature and art which served well enough to amuse the world when it was in its infancy. The time has come for the navigator to take a new departure. Efface the record of all that was said or done before the year 1500, or thereabouts. Throw the Greek and Latin classics overboard; abandon even "the intellectual pursuits" of those who wrote them; stick to "utilitarian science and studies, connected with practical, material, tangible, and useful things." "For more than five thousand years,—from the beginning of history until about three centuries ago,—the human race had made little progress in anything which we now regard as constituting material welfare, or growth in power, knowledge, and means of happiness." "A few of the last generations have not only excelled, but greatly distanced, the collective performances of all those who have preceded them." Abandon, then, "the barren studies" of the olden time; learn "the new philosophy," which dates only from the age of Bacon, and is illustrated by the marvels of modern discovery and invention. A lifetime is too short to acquire an adequate comprehension of what the utilitarian sciences of our own day have accomplished for the world's welfare. Let the dead past bury its dead. And this advice is given not only for the distribution of time and effort by men of mature years, but with especial reference to the education of the young.

This brief summary, given mostly in his own words, shows that Dr. Bigelow's quarrel is not only with the languages, but with "the intellectual pursuits," of the ancients,—with all the sciences and arts in which they peculiarly excelled. His censure strikes not merely their forms of speech, but their literature, their habits of thought, their arts, their logic, and philosophy. It is little that he denies the *educational* value of these

things; the present generation, he thinks, can profitably discard them altogether. The world, we are told, has outgrown the Greeks and Romans in all respects. The Essayist traverses the two thousand years of history which immediately preceded the age of Bacon, and finds that all is barren. To him, physical science is everything; the moral sciences are a mere wilderness of words and waste of labor. And even physical science deserves cultivation only so far as it leads to definite and tangible results, and conduces to the material welfare of mankind, — only so far as it facilitates the invention of such things as locomotives, spinning-jennies, and Parrott guns. The essay might bear as its motto the maxim of Sardanapalus: "Eat, drink, and obtain the maximum of physical ease and enjoyment; the rest is not worth a fillip." Not Dr. Bigelow's original intention surely, but the necessities of his argument, drove him to these sweeping iconoclastic doctrines. He finds it impossible to decry the study of the ancient languages except upon those low utilitarian principles which preclude our finding merit in anything that does not promote physical comfort, or gratify ambition by enslaving outward nature to our material uses. I am glad that it is so. The extravagance of the conclusions is a complete *reductio ad absurdum* of the premises.

The Essayist has overlooked one point, a due estimation of which is essential to any full consideration of the subject. Harvard College has less than four hundred and fifty undergraduates; add those at Williams, Amherst, Tufts, and one or two smaller institutions, and we have, in this State, a total of about one thousand students in college. It might seem that there are about one thousand others in schools and academies, who are pursuing preparatory Classical Studies; but as less than half of the undergraduate period is devoted to these studies, and not more than two years are spent in acquiring Latin and Greek enough for admission to college, — the remainder of the time being given to mathematics and physical or moral science, — it follows that there are not, *at any one time*, more than about one thousand, or twelve hundred, young men in Massachusetts who are studying what are called the dead languages. Our population is over twelve hundred thousand, of whom about one sixth, or two hundred thousand, are,

or ought to be, receiving a school education; in other words, one out of every two hundred pupils is, at any one time, studying the classics.¹ This proportion is probably larger in Massachusetts than in any other State in the Union; and I believe it is quite as large as in any country in Europe, with the possible exception of Germany, where the direct patronage of government fosters these studies to a somewhat unnatural extent.

Then, if asked whether our industrious and inventive contemporaries would do well to intermit their mechanical pursuits in order to study the ancient languages and sciences, the answer is, Certainly not; no sane advocate of Classical Studies expects or wishes the thousandth part of the whole community to do any such thing. But what then? Because not one man out of a hundred thousand needs to become a practical astronomer, we do not therefore break our telescopes and pull down our observatories. The function of the select few is not to be construed into a universal obligation. The real question is, whether those few, — about the two hundredth part of the whole educable number, — who have the time, means, and wish to obtain a *liberal* education, — that is, to give themselves, up to about twenty-one years of age, to *general* studies, before undertaking the *special* studies of some particular profession, — should be encouraged to devote one fourth or one third part of this training-time to the ancient languages and sciences; and this, not more for their own sake, than for that of the whole community who are hereafter to profit by their scholastic attainments. The classics have no place in our primary or grammar schools; we would not even make the study of them imperative in our scientific schools or technological institutes, though, for reasons soon to be given, the pupils in the two last would unquestionably be better fitted for their work by the acquisition of a little Latin and Greek. And even in our colleges, as already explained, less than half of the pupils' time is devoted to these languages.

¹ Harvard College has now (1880) over eight hundred undergraduates; and as the number in the other colleges is also considerably increased, there are now probably about sixteen hundred college students in Massachusetts. But a number of these come from other States; and as the population of Massachusetts now exceeds 1,600,000, the proportion stated in the text probably remains unaltered, as one out of every two hundred.

I am not going to weary you with an attempt even to recapitulate all the grounds of apology (if I must use that word) for classical learning. The field has been so thoroughly trodden down by the multitudes who have passed over it, that there is not a square inch of green turf left, and it offers but a dreary prospect. Scholars can well afford to rest their case on this single consideration, — that *the words and the thoughts of the old Greeks and Romans have been so thoroughly incorporated, so deeply ingrained, into modern language and literature, whether French, Italian, Spanish, or English, that no thorough knowledge or appreciation of these derivatives is possible except by going to the sources whence they were drawn ; that this infusion has taken place, even in a greater degree, into modern science, which is so built upon ancient learning, — its precise, far-extended, and ever-increasing nomenclature being almost exclusively Greek — that, without a tolerable knowledge of that language, it may fairly be said that the student of science, however earnest and capable, knows hardly a word of what he is talking about.* Without such knowledge, the lawyer must seem, even to himself, in the names of the writs which he every day draws, and in the phraseology of the legal aphorisms which he is compelled constantly to cite, to be prating a jargon compared with which even Choctaw would be significant and harmonious. Without it, the physician cannot read intelligently a single page of a medical book. Without it, the divine, except by dim approximation and with much blind trust in very fallible human guides, cannot interpret the very title-deeds of man's salvation. Language itself, in its widest sense, not of this or that particular nation, but of the whole human race, — that marvellous work, as I believe, not of man, but of God himself, — with all its intricacies of structure, complex harmonies, and subtle adaptations to the nicest shades of meaning, cannot be anatomized in structure or unfolded in thought, except by the aid of that special, and yet typical, form of it which was spoken in Attica two thousand years ago. Universal grammar is a science which owes not merely its terminology, but its very being and substance, to the light which the special formations and historical development of Latin and Greek, with their derivatives, have shed upon the structure of all other tongues.

It is but an illustration of this general fact to say of English *grammar*, in all its parts,—orthography, etymology, syntax, and prosody,—as taught in our lowest public schools, that it is only, as these very words import, an uncouth representative—a sort of bastard child—of the Latin and Greek accidence. And I believe most practical teachers will bear me out in asserting, that it is never taught with any thoroughness or to much profit, except as a consequent, and not as an antecedent, of the Latin grammar. How could it be otherwise, in view of the very complex origin of our language, its vigorous but somewhat wild development, and the heterogeneous elements of which it is made up? Our noble mother-tongue is alike remarkable for its copiousness, its flexibility, its strength, and its lawlessness. It will acknowledge no rule but

“*usus*

Quem penes arbitrium est et jus et norma loquendi;”

it will conform to no analogy; but its abundant life and luxuriant growth push forth into the most anomalous forms of branch, leaf, and fruit. Nearly forty per cent. of its vocabulary, it has been computed, is Latin or Greek; and only in the complex but regular structure of those languages can we find—I will not say a key to its intricacies, but—a criterion and instrument by which we can trace its processes of development and measure its departures from rule.

English literature, too, is so deeply imbued with the spirit of the classical ages that a large portion of it cannot be read with any enjoyment or intelligent appreciation, except under the light reflected from those stars of a distant firmament. Take Milton, for instance, in either of his two epics or in his minor poems; and, apart from the gorgeous diction, so redolent of Greece and Rome, you find the very matter and substance of his verses so deeply saturated with the classical aroma,—so rich with allusions, imitations, and illustrations from the old perennial sources, from Greek and Roman mythology, history, tragedy, and art,—that, take away all recollection of these, and the poet’s coloring fades, his spirit evaporates, and nothing remains but a *caput mortuum*. Even of his “Sampson Agonistes” it may be affirmed that only the framework is Hebrew; the substance, the drapery, the soul within, is pure Greek,—a

mere infusion of Sophocles and Euripides. Nearly as much may be said of Cowley, Dryden, Gray, Johnson, Keats; and even of large portions of Tennyson, Mrs. Barrett, and other popular bards of our own day. Bacon, rightly or wrongly claimed as the founder of modern utilitarian science, wrote half of his works in Latin, and decanted so much of the classics into his English prose, even into his most popular work, the *Essays*, as to be well nigh unintelligible to any but a classical scholar, except in a richly annotated edition. Thomas Hobbes, the true master and exponent of modern utilitarianism and materialism, also wrote Latin nearly half the time, and spent his youth on a translation of Thucydides, and his old age on a metrical version of the *Iliad* and the *Odyssey*. Follow down the line of English prose writers of any note, from Hooker and Bacon to Macaulay and Sir William Hamilton, striking out of each every allusion to the classics,—every citation from and everything suggested by them,—and what will remain but ragged fragments, alike destitute of coloring, coherence, and beauty?

Dr. Bigelow's *Essay* appears as a further exposition and defence of the theory maintained in his *Discourse on "The Limits of Education,"* pronounced at the opening of the Technological Institute; and must be viewed in connection also with an able "*Lecture on Classical Studies,*" published, a short time before, by Professor Atkinson of that establishment. But the peculiar functions and studies of that Institute, as it seems to me, stand in no need of this indirect advocacy, and will not be promoted by depreciating the quite dissimilar work and office of our American colleges. The great want of special training in physical science and art, by many who have not the time, means, or taste for a full course of liberal education, was recognized long since by the friends of such education, and was met, over twenty years ago, by the establishment, first at Harvard, and afterwards at most of our New England colleges, of a "*Scientific School,*" open to all who are acquainted with no language but their own, and who desire to study no other. Following the example thus set, and organized on precisely the same plan, the educational department of the Technological Institute has been created, to meet the wants of Boston, for

whose youth it is evidently a great convenience to be enabled to pursue their studies and still to live at home. The design is an excellent one, and every friend of liberal, as well as of scientific, studies will bid God-speed to the enterprise. But it seems very injudicious on the part of its special advocates to attempt to recommend it still further by maintaining that a proper college education is worthless, or unsuited to the wants of the age, and a scientific one all-sufficient for everybody. At any rate, is it quite consistent for them, under such circumstances, as soon as they have created a professorship of *English* language and literature, to proceed to appoint to it a gentleman who has been an accomplished teacher of *Latin* and *Greek* for about a quarter of a century, and to fill nearly every other professorship in the Institute by distinguished graduates of colleges? Such action is an involuntary confession, on their part, of the truth of the doctrine here maintained, — that, whatever may be said against the utility of Classical Studies, a good proficiency in them is, at any rate, indispensable for obtaining or imparting any competent knowledge of the English language or its literature.

I should not have alluded to this bit of local history, if it did not further illustrate the importance to the whole community of that course of *liberal* studies, in which the classics occupy the chief place, — of that comprehensive, systematic, and generous training, enjoyed though it be only by comparatively few, — which no one thinks of seeking elsewhere than within the walls of a college. It teaches the teachers. It breaks down the partitions, and even the jealousies, which would otherwise sunder and impede labor in special vocations. By laying the foundations broad, even if not deep, — by widening the range of our sympathies, as well as of our power of comprehension, — by counteracting the necessarily narrow and narrowing influences of the division of labor when applied to intellectual pursuits, it creates, what here in America, at any rate, we are in sore need of, a literary and scientific public, able and patient always at least to hear, not infrequently qualified to understand, sometimes competent to judge.

And here I need not wander far in search of an illustration, but may find one in the very constitution of this Academy,

and an echo in the feelings, as well as the judgment, of every gentleman who hears me. Here, our functions are as unexclusive as our corporate appellation, "The American Academy of Arts and Sciences," which might otherwise perhaps appear somewhat sweeping and pretentious. Here, more and more frequently, perhaps, than in any other assembly called together at stated times on this continent, we are reminded of the essential brotherhood of all the arts and sciences; and this truth cannot be felt, as well as understood, anywhere so well as in a society composed in the main of scholars, — of liberally educated men. I have not sought out the statistics of this subject, as it would be an impertinence to do so; but I fear not to avow the belief, that more than three fourths of our number are graduates of colleges. Neither can there be any fear lest I should seem to be here making an invidious distinction; since it appears from the proceedings of this evening,¹ as well as from the results of several other meetings which are still recent, that what few honors we have to bestow, our Rumford medals and our elections to office, often fall to the share of the small minority who are more or less self-taught. All the merit which my argument requires me to claim for those of us who have been trained at college is, that our Classical Studies, however little else they may have done for us, have, at least, so far liberalized our minds and increased our power of intelligent apprehension, that we can gladly hear, and to some small extent understand and appreciate, whatever is done to extend the bounds even of the most recondite and difficult sciences. We cannot make telescopes, probably could not adjust or use them when made; but we can honor those who have this power, and are thereby enabled to pierce farther into the remote secrets of God's universe than mortal eye ever saw before. Our Latin and Greek, however imperfectly remembered, serve at least to remind us, during the somewhat abstruse and otherwise forbidding expositions and discussions to which we often listen here, that all the sciences, whether they date from Aristotle and Hipparchus, or from

¹ At this meeting of the Academy, the Rumford Medal was delivered to Mr. Alvan Clark, of Cambridgeport, for improvements made by him in the construction of lenses for refracting telescopes.

this nineteenth century, whether the latest improvements in them come from Italy, Germany, France, England, or the United States, still *speaking a common language*, and that one which we learned when we were boys, and which calls up a rush of pleasant memories. We can hear, not only without flinching, but even with gleams of significance and delight, Professor Peirce discourse about *quaternions*, *isoperimetrics*, *loxodromics*, and *brachystochrones*; or you, Sir,¹ of *exogens*, *endogens*, *phyllotaxis*, *epiphytes*, *dichotomous*, *pentágynous*, and *pentandrous* plants; or Mr. Agassiz, of *digitigrades*, *acalephs*, *gasteropods*, *cephalopods*, *pachyderms*, *echinoderms*, and other "gorgons and chimæras dire;" and even Dr. Bigelow, talking Greek in spite of himself, by lecturing about *diagnosis*, *prognosis*, *prophylactics*, *anæsthetics*, *endemics*, *epidemics*, and *sporadics*. Yet further, though physical science, in the intoxication of great success, has been somewhat encroaching and domineering of late, even logic and metaphysics are permitted at least to whisper of *subsumptions*, *epicheiremas*, *sorites*, and the *quantification of predicates*; or of *ontology*, *entelechy*, *noumena*, *apperception*, *teleology*, and *synthetic cognitions à priori*. These, and ten thousand others like them, are not merely intelligible as simple appellatives or single words, with a sort of classical fragrance about them, but in their composite character they are concise definitions or descriptions, which stir the imagination and the memory, as well as the intellect proper. As quaint old Fuller says, to us "the joints of these compound words are so naturally oiled, that they run nimbly on the tongue, which makes them, though long, never tedious, because significant." But to those who have no tincture of classical learning, whether addressed to the ear or the eye, they are only sesquipedalian agglutinations of syllables, as little significant as *abracadabra* or *Chrononhotonthologos*.

Any one who should fancy that they are too numerous, cumbersome, and pedantic, or that they might be replaced by pithy English words, may be assured that his education in any one science has not yet reached the *pons asinorum*. These formidable polysyllables are "a kind of short-hand of the science,

¹ Dr. Asa Gray, Professor of Botany in Harvard College, and Dr. Bigelow's successor as President of the American Academy.

or algebraic notation ; ” and without them, the investigator would be as helpless as an algebraist or chemist without his symbols, or an arithmetician without the Arabic numerals. In the last analysis, all science, whether physical or moral, is nothing but skilful classification ; and without a curiously compounded nomenclature and terminology, which can be built up only from Latin or Greek roots, classification would be but another name for confusion. And for this use, it does not matter much that most of us retain but a very dim memory of our studies at school and college ; as almost numberless compounds can be formed by ringing the changes on a very few elements, a mere smattering of the classical vocabulary, such as is kept up almost involuntarily by reading common English prose and poetry, suffices to interpret these scientific shibboleths. A very few prepositions often repeated, a small stock of adjectives, also frequently recurrent, and a moderate supply of the most familiar nouns are forged into the keys which unlock every coffer in the treasure-house.

Intelligent companionship, appreciation, and sympathy, such as the scientific associations constituted like this Academy are enabled to afford, through the fact that all the sciences speak what may be called a common language, together with the secret consciousness of the far wider companionship and sympathy which is kept alive by finding this scientific vocabulary also common to nearly all civilized nations, though in ordinary discourse they use a babel of diverse tongues, furnish an almost indispensable encouragement for persistent scientific effort and research. The greatest need of the *savant* at the present day, especially in the more recondite branches of inquiry, as it seems to me, is the need of an audience. He is in no danger of starving ; the age and the country have at least raised him above *that* peril. Books are always at hand, and even laboratories and museums are frequent. But isolate him altogether in his work, cut off his readers and hearers, as Dr. Bigelow proposes to do, first by breaking up the comprehensive scheme of studies at college, where alone one comes to know a little of almost everything, and then by cutting up from the roots the common language of the learned, and you dishearten him altogether ; you reduce him first to silence, and finally to inaction.

How important this community of scientific terms among all cultivated languages is to the *savant*, may be seen from the example of the only nation in Europe which seems to be under no necessity of building up its technicalities out of the dead languages. Alone among all modern tongues, the German fully rivals the Greek in its power of forming compounds without limit from native roots ; and it has used this power to a considerable extent, by employing such words as *Sauerstoff*, *Wasserstoff*, *Kohlstoff*, and *Stickstoff*, instead of oxygen, hydrogen, carbon, and nitrogen. But, convenient at home as such a vocabulary certainly is, and flattering to national pride, it is found to place too great a bar upon their freedom of scientific intercourse with other nations ; and hence their list of such terms has never been completed, and it is but in partial use even as far as it goes. So true is it what Homer says, as cited and applied to illustrate this very point both by Plato and Aristotle, that

“By mutual confidence and mutual aid,
Great deeds are done, and great discoveries made.”

Because the sciences in these modern times have been multiplied and enlarged, and the arts increased, Dr. Bigelow argues that any liberal and comprehensive culture of mind, such as is attempted in our colleges through a course of general studies, has become impracticable. To adopt his own metaphor, as “the educational loaf on which the community is fed” has been so much enlarged, he will not allow to classical literature even a fragment of the crust. And further, because the division of labor has been profitable in mechanical pursuits, he affirms that pupils cannot “undertake to make themselves *competent representatives* of all the various sciences, the literary studies, the languages dead and living, which are now professedly taught in our colleges and seminaries.” Of course they cannot ; but in view of that solidarity of the sciences, which every day’s progress is making more evident, the real question is, whether a student can become a “competent representative” of any one science, without that very general culture of mind which is nowhere attempted but in college ; or whether any one scientific or literary pursuit would flourish and expand, if each were isolated, none but its special votaries

having any acquaintance with it whatever, and these being doomed, like each class of artisans in a big workshop, to spend their lives intellectually in making the eighteenth part of a pin. Dr. Bigelow's scheme of a scientific education begins by depriving the student of the common language of all the sciences, proceeds by leaving him without any scientific public, either at home or abroad, competent to hear and judge his work, and ends by requiring him to mount to the mast-head after he has taken away all the shrouds. Such a scheme might produce a chemist, though I doubt it; but it certainly would not make even the eighteenth part of a man. And yet the Essayist complains of sciolism. Why, the worst sort of sciolism, and one with which we are peculiarly afflicted in this country, is, that men assume to be scientific chemists on an amount of general knowledge which would hardly qualify them to be decent apothecaries; or prate about the most difficult problems in geology, before they know enough of botany or zoölogy to pronounce on the character of a single fossil. Yet the starved and miserly training which breeds such pretenders we are now invited to substitute for the liberal and comprehensive culture, which aims to develop all the faculties, and thereby to "fit a man to perform justly, skilfully, and magnanimously all the offices, both private and public, of peace and war."

I appeal to your own favorite science, Sir. What sort of a botanist is he, who knows nothing of physiology; or how much physiology can he acquire, if he is not something of a chemist; or what is chemistry, if not based on physics; or can one become a physicist without a competent acquaintance with mathematics; and how much time and labor must be spent on the very elements — the far-extended vocabulary and notation — of each of these sciences, by one whose total ignorance of Latin and Greek obliges him to master them, as it were, mechanically and by main strength, just as he would commit to memory whole pages of a dictionary? I suspect the first lesson you would assign him in botany would be the first six pages of the Latin Grammar, — to be taken on an empty stomach.

Besides, in the argument we are now considering, it is for-

gotten that a process of generalization, condensation, and elimination takes place, at least *pari passu*, generally in advance, of every step of progress in science. Often, indeed, the progress consists in this process of "boiling down" the previous results; one general law takes the place of a multitude of formerly isolated facts. Hence it is, as has been often remarked, that an undergraduate in college may now easily acquire mathematical truths and formulas which Newton was ignorant of; he must know more astronomy than Copernicus did, and more physics than Galileo; and he makes these attainments, too, with less than half the time and effort which it cost the contemporaries of those illustrious men to rise even to the level of their own day. And if we are to adopt the mode of estimating relative merit which the Essayist coolly applies to the ancients and moderns, acting on the maxim that a living dog is better than a dead lion, it follows that our school-boys are to be preferred over the great discoverers of truth, the teachers of the world.

Dr. Bigelow affirms that "the world mainly owes its present advanced and civilized state to the influence of certain *physical* discoveries and inventions, of comparatively recent date, among which are conspicuous the printing-press, the mariner's compass, the steam-engine," etc. And, in speaking of those great events which are usually considered as marking the origin of *modern* civilization, namely, the Reformation, the exodus of Greeks from Constantinople, and the revival of letters, — two of these, be it observed, being only names for the revival of Classical Studies, especially of Greek, — he still asserts, that "at the root of all these agencies, and deep and far beyond and above them, was the vivifying nurture of utilitarian science." If so, it is somewhat remarkable that the effect preceded the cause by about a century, since the dawn of modern utilitarian science cannot be placed earlier than the age of Bacon and Galileo, at the very close of the sixteenth century, when the three great agencies in question had been at work about a hundred years.

But let this pass, as I would call attention only to the main doctrine here and elsewhere propounded by the Essayist, which, like Mr. Buckle's theory, makes civilization itself mainly

consist in such things as gas-lights, steam-engines, sewing-machines, photographs, and vulcanized India-rubber. I reject the definition altogether. Not what men *have*, but what they *think* and *believe*, or, rather, what they *are*, are at once the tokens of their culture and the sources of their strength. Turn a civilized community naked into a wilderness or a desert, and they will be a civilized community still; and their hands, guided by their minds, will subdue that wilderness and turn that desert into a garden. The Athenians, in the age of Pericles, had not one of these *soi-disant* material and tangible means and agents of civilization; but those Athenians, saving only their lack of one element, which originated in Palestine some four hundred years afterwards, were the most highly civilized people the world has ever known; and their works, their arts, their literature, their philosophy, have fed and colored, from within outwards, the civilization of all succeeding times. The men of that age and place are even now

“ the dead, but sceptred, sovrans,
Who still rule our spirits from their urns.”

As Sir William Hamilton tells us, “every *learner* in science is now familiar with more truths than Aristotle or Plato ever dreamt of knowing; yet, compared with the Stagirite or the Athenian, how few even of our *masters* of modern science rank any higher than intellectual barbarians!”

After all, have these recent physical discoveries and inventions contributed so largely, even to our material well-being, that we can fairly consider them as the glories of modern civilization? Have most of them had any other effect than to feed man’s vanity and nourish sterile wonder? Take, for example, one of the most brilliant and striking of the whole number, and one to which abstruse science most largely contributed, — the discovery of Neptune. What matters it to you or me personally, or to any human being, or even to the other members of the solar system itself, that, on its outmost verge, some two thousand eight hundred millions of miles from us, and so hardly perceptible to the unaided vision as a faint dot in the evening skies, there is a planet called Neptune, of which we know nothing whatever, except that it is there, and that it circles steadily at a measurable rate round the sun? I have

heard a remark quoted from a queer little girl, who said she was afraid to ask her Sunday-school teacher, who Nimrod was, for fear he should tell her, and it would be so useless to know. So I am afraid to ask Professor Winlock, director of the Harvard Observatory, if he has recently ascertained, through his big telescope, whether Neptune is still extant in his proper place, or whether he has seceded, — gone off, in a hyperbolic or parabolic curve, never to come back again. I am afraid to ask, lest he should tell me, and it would be so useless to know. Why, if Neptune himself should threaten such secession, I doubt not that the other planets, in solemn congress assembled, would say to him, "Erring brother, depart in peace; it is a matter of profound indifference to us, whether you go or stay."

And then the telegraph. For a year or two, we have all been shouting, at the top of our voices, "Great is the Atlantic telegraph, and Cyrus W. Field is its prophet!" But here, again, we forget to ask what the thing is worth, in the greatness of our astonishment that it should be done at all. Like the fly in amber, —

"The thing itself is neither rich nor rare;
But wonder how the devil it got there."

What has the Atlantic telegraph done for us? It has given us news from Europe less than a day old, instead of the same news ten or twelve days old. But the intelligence does not lose its distinctive character *as news*, through the greater or less time occupied in its transmission. I never heard that news were like eggs, liable, if kept over ten days, to become addled. Let me not undervalue the good sometimes done by the telegraph. It has played an important, even an indispensable, part in the apprehension of John H. Surratt. Once in a great while, it is a tolerable catchpole, an efficient subsidiary agent to the state's prison and the gallows. By its means, we now have Surratt safe in irons, and can bring him to fair trial; though, at this late day, I suppose, very few persons care whether the miserable wretch is hanged or not.¹

¹ He was not hanged. On his trial as a supposed accomplice in the murder of President Lincoln, the jury virtually found that the offence was "not proven." Surratt was set free, and became an itinerant lecturer.

Because the ancients had none of these things, — no telegraphs, newspapers, chloroform, or lucifer-matches, — it is charged against them that their civilization was narrow and barren, and, “in their domestic habits, they were primitive, destitute, and uncleanly.” This whole accusation may be summed up in the old sarcasm against the Emperor Augustus, that, “with all his splendor, he had no glass in his windows and not a shirt to his back.”

Here is the utilitarian idea of civilization ! It does not consist in the might of intellect, nor in the beauty of poetry, nor in the power of oratory, nor in the skill of statesmanship, nor in the graces of sculpture and architecture, nor in the wisdom of philosophy, nor in the depths of abstract science. No. Civilization — true, modern civilization — consists in none of these things ; for, in each and all of them, unluckily, the men of the Periclean and the Augustan age were undoubtedly our equals, if not our superiors. But civilization — the genuine modern article — consists in glass windows and linen shirts. As to the two assertions contained in this sarcasm against the Emperor, I may as well mention, in a parenthesis, that they are not more than half-true. Long before the time of Augustus, the Romans had glass enough to stock a modern fashionable apothecary’s shop ; though they seem to have used it chiefly for bottling, not their medicines or their wines, but their tears. If they did not put it in their windows, it was probably for the same reason that half of the Italians at the present day do not put it there, — because the climate does not require it. I suspect glass windows are an indispensable condition of civilization only in high latitudes. As to the other alleged fact, if having a shirt means, as I suppose it does, wearing linen next the skin, it is singular enough that, within a few years, nearly all of us, for hygienic reasons, have discarded linen, and gone back to the old Augustan dress, — fine wool or silk next the skin. In the sense of this sarcasm, if it has any sense, I doubt whether a single gentleman here present has a shirt to his back. To the Union army, consisting of over a million of men at the close of the late war, I believe, Falstaff’s account of his own troop was applicable, — that there was but a shirt and a half in the whole company.

Even if it be granted that the glory of modern times is its mechanical inventions, it may well be doubted whether the study of physical science, and the establishment of Technological Institutes, will lead to their multiplication or improvement. The fact is notorious, that most of these are the results of accident, or have been made by unlearned men, chiefly by ingenious artisans. Even the disposition which seeks for them, and the course of experiments instituted for their attainment, are unfavorable to habits of scientific research ; for gold, not truth, is the object in view ; and though some general fact or law of nature may incidentally be developed, the mind was not on the watch for it, and it will probably be overlooked or forgotten. If you would train up inventors, educate your sons at the blacksmith's forge or the carpenter's bench, in watch-factories, cotton-mills, or machine-shops. These were the schools in which Arkwright, Watt, Stephenson, Paul Moody, Howe, Hobbs, McCormick, Edison, and Goodyear studied. Sir Humphrey Davy received great laudation for the safety lamp ; but it is now known that he was anticipated in it, several years, by a sooty son of the mine, who, at the time, was hardly able to write his name. History has not even recorded the authorship or the date of some most useful contrivances and processes, and has left others in dispute ; such as glass, the mariner's compass, gunpowder, and the printing-press ; probably because their inventors were ignorant and obscure men, who did not even know the worth of what they had accomplished. The very process of invention is often blindly tentative, and success in it is a mere accident, as in hunting for a needle in a hay-mow ; after you have sought it in vain for a week, there comes along a clown who thrusts his hand into the mow, and pricks his finger with it at the first trial.

Science, it is true, has an office to perform ; but generally it is one which is subsequent to the invention, and which consists in explaining the *rationale* of the process, by pointing out the laws of nature through which the result was obtained. But even in this subsidiary function, it is often baffled and lags far behind inventive art. Why should caoutchouc and sulphur, moderately heated and rubbed together, produce that marvellous and most useful compound, vulcanized India-rubber ? The

chemist does not know ; and he is equally ignorant in respect to many of the processes in metallurgy and pharmacy. Why is cinchona a potent febrifuge ? Ask the Peruvian Indians, who first taught our doctors how to use it.

These facts, if rightly weighed, do not discredit physical science, and certainly are not here cited for that purpose. But they do manifest the pitiable folly — I had almost said, the impiety — of measuring the value either of physics or metaphysics, chemistry or philology, by a low utilitarian standard ; of estimating our proper mental food by its casual and indirect results in fattening our bodies, or pampering our lower appetites and desires. In this Academy, at least, I dare assert that the ultimate object of scientific research is not any external good, but knowledge for the sake of knowing ; and let it be remembered, in behalf of the classics, that this great truth has at least the verdict of all antiquity in its favor, though it is too often forgotten or slighted in this nineteenth century. It is only a corollary from this maxim, but one specially applicable to the subject of education, to say, that the mere effort to know is of more worth to the individual who makes it, than the knowledge acquired. The chief object of education, as it seems to me, is not to multiply inventions, but to develop the intellect and form the character. “The intellect,” says Aristotle, as cited by Hamilton, “is perfected not by knowledge, but by activity.” But as Aristotle was an old Greek, whose authority will be disputed, I will rather cite one who is a modern Aristotle, at least in the estimation of his admirers, — the great hierophant of Positive science, — Auguste Comte ; who tells us, that “*les hommes ont encore plus besoin de méthode que de doctrine, d’éducation que d’instruction*” [men stand much more in need of the method, than of the matter, of learning, — of education, or the means of drawing something out of the mind, than of instruction, or the means of putting something into it]. Or take the same meaning in Greek, in which form I well know it will best please the Essayist ; *ὁ φιλοσοφία, ἀλλὰ φιλοσοφεῖν*.

Every generation of civilized men inherits the intellectual wealth, the mechanical contrivances and the useful arts, of all the ages and the nations which have preceded it ; but the nat-

ural wonder and self-complacency with which men view their own achievements, often prevent them from estimating fairly the extent of their patrimony. When the Essayist shouts and claps his hands at the feats of modern science, he may be reminded of the witty reply made by the elder Astor, of New York, who, when mildly reprov'd for not contributing so largely to some public object as his own son had done, answered, "That is not a fair example; *he* has a rich father." Scholars will not admit that the attainments of the Greeks and Romans in practical science and art were inconsiderable, or that their every-day life was meagre, uncleanly, or comfortless. We still teach in our schools and colleges, essentially in its original form, the geometry of Euclid and Archimedes, and the fundamental principles of mechanics, hydrostatics, and optics, as originally expounded by them. The discovery of the principle of specific gravity by the latter, and its application by him in determining the amount of alloy in base metals, was perhaps the most important single step that was ever taken in physical science; while his writings, and his noted exclamation, that he would move the universe if he could find a fulcrum, show how clearly he understood the mechanical powers. His defence of Syracuse for three years, against the legions of Marcellus, was as marvellous a display of the resources of physical science and mechanical ingenuity in war, as the modern sieges of Sebastopol and Charleston; and his affecting exclamation when the Roman sword had already reached his neck, "Do not efface my diagrams," places his name at the head of the list of the illustrious martyrs of science. Eratosthenes measured the obliquity of the ecliptic, and a degree on one of the earth's meridians, with an astonishing approach to accuracy, thereby virtually determining the circumference of the globe, though he had hardly any better instrument than a sun-dial. Hipparchus detected the precession of the equinoxes, worked out the doctrine of the sphere, and the first ideas of plane and spherical trigonometry, noticed the parallax of the sun and moon, calculated lunar and solar tables, and predicted eclipses with great accuracy, and by a method which is still in use in the higher mathematics, and of which Whewell says, that it is "not only good, but, in many

cases, no better has yet been discovered." Strabo and Ptolemy are still high authorities in geography, the latter having determined the mathematical principles of projection, and constructed maps, charts, and almanacs with great correctness. Hippocrates and Galen are still quoted as in high repute among medical writers, and whole cases of surgical instruments have been found at Pompeii. The Julian correction of the calendar was not perfect; but England had no better till the reign of George II.

In further support of the conclusion which I seek to establish, I will cite an authority that Dr. Bigelow will surely respect, as it is that of the arch-utilitarian of our times, the acknowledged chief of the clan, and confessedly one of the greatest thinkers, as well as one of the great scholars, of our day; I mean John S. Mill. Speaking of the Greeks, he says: "They were the beginners of nearly everything, Christianity excepted, of which the modern world makes its boast. They were the first people who had a historical literature, as perfect of its kind (though not the highest kind) as their oratory, their poetry, their sculpture, their architecture. They were the founders of mathematics, of physics, of the inductive study of politics, so early exemplified in Aristotle, of the philosophy of human nature and life. These things were effected in two centuries of national existence; twenty, and upwards, have since elapsed, and *it is sad to think how little, comparatively, has been accomplished.*"

As early as the time of the Kings, Rome seems to have been as thoroughly drained by common sewers, of marvellous size and solidity of workmanship, as the best of our modern cities. Before the age of the Emperors, its magnificent aqueducts, some of them still in use, gave it a better supply of pure water than any modern city had thirty years ago, and better than London has now; while the number and magnificence of its public baths indicate that its inhabitants highly prized the virtue of cleanliness. Their roads were so skilfully and solidly constructed, that, after being two thousand years in use, their remains still challenge the admiration of modern engineers. Their masonry and brick-work are equal, if not superior, to the best constructions of our own day. The arts of agricult-

ure, ship-building, tanning, and metallurgy were highly developed among them, and they furnished the models of some of our most graceful forms of parlor furniture. Indeed, to one who has strolled through the streets and buildings of Pompeii, and inspected the collections in the Royal Museum at Naples, where the kitchen utensils and contents of the shops of this disinterred city have been brought together, or visited the remains of the magnificent villas that once studded the coast around Baiæ and Cape Misenum, the assertion, that the ancients had made little progress in the useful arts, and that, in their "domestic habits, they were primitive, destitute, and uncleanly," will appear equally amusing and extravagant. If it be answered that these comforts and luxuries, after all, belonged only to the privileged few, and afford little indication of the number and welfare of the bulk of the people, I reply by pointing to the number and condition of those who are emphatically called the "dangerous classes" in London, Liverpool, Glasgow, and New York; to the dens of filth and wretchedness which they inhabit, and to the social state of three-fourths of the Irish people; and ask, if your boastful modern civilization has much reason to plume itself on the comparison?

I have occupied, Sir, too much of the Academy's time, and far more than would have been necessary, if the question had concerned only the relative merits of ancient and modern literature and science. My object has been to plead the cause not merely of "classical," but of "*liberal* studies," — of that broad and generous culture of all the faculties, which is nowhere even attempted save in our colleges and universities, and of which Latin and Greek form a large and necessary part, but by no means the whole. Dr. Bigelow's argument seemed to me directed not merely against classical, but against *all* literature; against, not merely the moral and abstruse sciences, but all science whatever, which does not directly promote man's outward comfort and material well-being; against not this or that special scheme of education, but any comprehensive course of general studies. But in view of some of the ominous tendencies of the age, which are nowhere so fully and darkly developed as in our own land; in view of these materialistic and fatalistic doctrines, which seem already the most

popular among students in most departments of natural history and physical science; in view of the accursed thirst for gold, and the frenzied passion for luxury and ostentation, which are debasing the morals of industry and commerce, and corrupting the tone of our politics, till many have come almost to despair of the republic; in view of the ignominy of some of our large municipal governments, and the want of either character or ability in our Congress, — it seems to me, that he who attacks the cause of liberal education, and thereby so far tries to lessen the number, diminish the influence, and benumb the powers of that class of independent, educated, and thoughtful men, who alone are competent, humanly speaking, to resist these debasing tendencies and uphold the cause of integrity, learning, and truth, is, in fact, though unwittingly, striking a death-blow against the chief agencies and supports of American civilization.

APPENDIX

ON

THE ABUSE OF THE STUDY OF GRAMMAR.

IF a tolerable proficiency in Latin and Greek could be acquired only by devoting eight or ten wearisome months exclusively to studying the grammar of each of these languages, I should not have a word to say in defence of classical learning. Such an employment of time appears to me not only injudicious and unnecessary, but almost sinful. It seems of late to have been forgotten among us, that grammar, at best, is only a subsidiary science, a knowledge of it being valuable not for its own sake, but as a key to the meaning and structure of sentences, and thereby a necessary introduction to literature. Formerly, we studied grammar in order to read the classics; nowadays, the classics seem to be studied only as a means of learning grammar. Surely a more effectual means could not have been invented of rendering the pupil insensible to the beauties of the ancient poets, orators, and historians, of inspiring disgust alike with Homer and Virgil, Xenophon and

Tacitus, than to make their words mere pegs on which to hang long disquisitions on the latest refinements in philology, and elaborate attempts to systematize euphonic changes and other free developments of stems and roots. The Germans have corrupted philology as well as philosophy by their ponderous metaphysics; and their latest theories and technicalities have been imported into our school grammars, an acquaintance with them being made a condition precedent to admission to college. One is painfully reminded of what Jovius (Giovio) said of Politian, some four hundred years ago, after the appointment of the latter to a professorship of Latin and Greek at Florence: "Hitherto I have listened to grammarians and critics from that chair; but the Muses have at last taken pity on our grammar-beladen ears, and sent us one who can feel the sentiment of Virgil and Homer, as well as explain their syntax." A foreigner would make slow progress in learning to read English, if he should begin with Horne Tooke's "Diversions of Purley" as a text-book. Yet our grammars have swelled to their present inordinate size in order to include much which perfectly resembles the speculations of Horne Tooke, except that they have not the faintest claim to be regarded as "Diversions." Andrews and Stoddard's Latin Grammar covers about four hundred closely-printed pages, in type so fine as to be injurious to the eyesight; Hadley's or Crosby's Greek Grammar contains nearly as much. Instructors complain, and with some reason, that the candidates whom they offer for admission to college are liable to be *conditioned*, as the phrase is, or declared to be insufficiently instructed in grammar, to the great injury of their teacher's reputation, if they have not committed to memory, and been thoroughly drilled in explaining and applying, every paragraph of this vast collection of grammatical theories and niceties.

Over forty years ago, a small abridgment of Mr. Edward Everett's translation of Buttman's Greek Grammar, comprising, to the best of my recollection, not more than one hundred and eighty openly-printed pages, was accepted as a sufficient qualification for admission to the freshman class; and the amount of Latin Grammar required was proportionately small. Yet, at that period, the quantity of Latin and Greek studied

by undergraduates was at least one third more than what is now required of them. That this amount was not, in one sense, so *well* studied then as now, — that is, that the student did not acquire so much minute philological information, — may be readily admitted. But in the ability, at the time of graduation, to read and enjoy the Latin and Greek authors, he was considerably in advance, as I believe, of our recent graduates. He had command of a larger vocabulary, had profited by more experience in disentangling difficult constructions, had stored his memory with a larger number of pithy phrases, gnomic sentences, and scraps of verse, and had been less injured by the indiscriminate use of *translations*. Classical learning seems to me to have steadily declined in this country of late years, in respect both to the number of its votaries and to its estimation with the public at large, just in proportion as its professors and teachers have diminished the time and effort bestowed on reading the classics, in order to enforce more minute attention to the mysteries of Greek accentuation and the metaphysics of the subjunctive mood. He will do most to revive it who shall be the first to publish, in a volume of not more than three hundred openly-printed pages, *all* the grammatical forms and principles, *both* of the Latin and Greek languages, which are required to qualify a candidate for admission to college, and which will suffice even for the undergraduate studies of nine tenths of the students. Those who are ambitious to become Scaligers, Bentleys, or Porsons, may study the whole of Andrews and Stoddard, or of Zumpt, Krüger, and Buttmann.

A MINORITY REPORT ON THE SILVER QUESTION.

PRESENTED TO THE SENATE OF THE UNITED STATES IN APRIL, 1877.¹

UNABLE to accept the conclusions at which a majority of the Commission have arrived, the undersigned respectfully submits what follows as a Minority Report: —

From the tables showing the monthly fluctuations in the London market price of English standard silver (925 thousandths fine) per ounce, it appears that, during a period of forty-one years, from January, 1833, to January, 1874, this price oscillated around 60*d.* per ounce, never falling below 58½*d.*, and never rising to 63*d.* Assuming the average price to have

¹ The Congress of the United States passed the following concurrent resolution on the 15th of August, 1876: —

“*Resolved*, by the Senate and House of Representatives, That a Commission is hereby authorized and constituted, to consist of three Senators, to be appointed by the Senate; three members of the House of Representatives, to be appointed by the Speaker; and experts, not exceeding three in number, to be selected by and associated with them; with authority to determine the time and place of meeting, and to take evidence; and whose duty it shall be to inquire —

“*First*, Into the change which has taken place in the relative value of gold and silver; the causes thereof, whether permanent or otherwise; the effects thereof upon trade, commerce, finance, and the productive interests of the country, and upon the standard of value in this, and foreign countries.

“*Secondly*, Into the policy of the restoration of the double standard in this country; and, if restored, what the legal relation between the two metals, silver and gold, should be.

“*Thirdly*, Into the policy of continuing legal tender notes concurrently with the metallic standards, and the effects thereof upon the labor, industries, and wealth of the country; and

“*Fourthly*, Into the best means for facilitating the resumption of specie payments.”

The Commission were required to make report to Congress at an early day, “with the evidence taken by them, and such recommendations for legislation as they may deem proper.”

The members of the Commission appointed on the part of the Senate were, Mr. Jones, of Nevada; Mr. Boutwell, of Massachusetts; and Mr. Bogy, of Missouri.

Those on the part of the House of Representatives were, Mr. Gibson, of Louisi-

been 60*d.*, we find the ratio of value between silver and gold to have been as 1 to 15.7.¹ In 1874, the price of silver began to fall, though the decline did not become considerable till May, 1875, from which time, though with some fluctuations, the depreciation rapidly increased, till in July, 1876, the price touched 47*d.*, being a fall of twenty-one per cent., the ratio being then as 1 to 20. After July, the price advanced again, till in December, 1876, it was about as high as at the beginning of the year.²

Are these great and sudden changes in the relative value of the two precious metals attributable to a fluctuation in the value of silver, or in that of gold, or partly in both? This is the first question which it is the duty of the present Commission to consider.

In the opinion of the undersigned, formed after a careful examination of the evidence presented to this Commission, and to the select committee of the English House of Commons on the same subject, which made its report through Mr. Goschen last July, these changes must be attributed exclusively to a

ana; Mr. Bland, of Missouri; and Mr. Willard, of Michigan. Those who were appointed to serve upon the Commission as "experts" were Mr. W. S. Groesbeck, of Ohio, and F. Bowen, of Massachusetts.

Frequent meetings of this Commission were held in the city of New York throughout October and November, 1876, at which many witnesses were examined and a great body of evidence was collected. It soon became evident that a large majority of the members were in favor of attempting to restore what is called the double standard of value, and of making the obsolete silver dollar again a legal tender for the payment of debts, though it had been expressly demonetized by the Revised Statutes of 1874. The inevitable result of these measures, as it seemed to me, would be a breach of the public faith and a depreciation of the currency equal to the decline in the market value of silver bullion. Hence my labor was confined chiefly to the preparation of this "Minority Report." I expected to be in a minority of one, and was therefore agreeably surprised to learn that, before it had been presented to Congress, it was adopted and signed by another member of the Commission, Mr. R. L. Gibson, now Senator of the United States from Louisiana.

¹ An ounce of English *standard* silver contains 444 grains of the *pure* metal; and a sovereign contains almost exactly 113 grains of *pure* gold. Then 60*d.*, or one fourth of a sovereign, contains 28.25 grains of pure gold, and the ratio of value between the two metals is as 28.25 to 444, or as 1 to 15.716 +.

² After January, 1877, the price rapidly receded again to 50*d.*, and of late it has oscillated around 52*d.* Instead of being a standard for the measure of values, I doubt whether any of the principal articles of international trade, during the last five years, has fluctuated in price so much or so suddenly as silver.

depreciation of silver, the fluctuations being such only as often accompany, at the outset, any considerable rise or fall in the market price of a single commodity, before the reality and the precise amount of the alteration are definitely established.

Speaking generally, the value of anything is its purchasing power, or, in other words, its ratio of exchangeableness with other commodities. Whenever gold is the only standard, the average prices of commodities in general, after allowing for special causes of fluctuation in particular cases, indicate with sufficient precision the average value of gold. In fact, they do not merely indicate; they *are* that value. If there has been no recent panic in the market, no special cause of general depression of trade, a general fall of prices expresses a rise in the value of gold; and, conversely, if a fever of speculation has not for a time unduly stimulated the market, a general advance of prices is a fall in the value of gold. Now, during the fourteen months ending July, 1876, there was no general fall of prices in the London market, corresponding to the great depreciation which then took place in the price of silver. In July, 1876, an ounce of standard silver would not purchase, either in London or New York, by about seventeen per cent., so large a share of commodities generally as could have been obtained for it fourteen months before. But gold had not risen. An ounce of standard gold could have been exchanged for very little, if any, more of other commodities generally, excepting silver, than in May, 1875. Even if general prices were somewhat depressed during these fourteen months, they certainly did not then immediately undergo a far more rapid change in the opposite direction, reaching their former level in December, 1876. In all its essential features, the fluctuation in the price of silver was an isolated phenomenon, having nothing corresponding to it in the general course of trade.

If we look at the circumstances affecting the relative demand and supply in the case of the two precious metals, we shall arrive at the same conclusion. During the last quarter of a century, the annual product of gold from the placers and mines has been so much in excess of the demand as to render it exceedingly probable that the value of that metal has been steadily, though slowly, falling, and that this decline is not even yet arrested.

It is matter of the commonest observation, that the necessary expenses of living and maintaining a family have been constantly on the increase since 1851; the prices of commodities generally, reckoned in gold, have risen very considerably, both in Europe and America. No one expects that they will recede again to what was their level before the discoveries of gold in California and Australia. The total annual product of gold in the world had risen from about twenty-seven millions of dollars in 1849, to an average of more than one hundred and five millions for the five years beginning with 1850, and to one hundred and thirty-six millions as the average for the next five years ending with 1859.¹ What was the consequence of this enormous increase of the supply?

From the price-lists of the "Economist" newspaper, and from other sources, Professor Jevons, in his work on the Fall of Gold, published in 1863, compiled tables of the monthly prices of thirty-nine of those chief articles of commerce which may properly be regarded as necessities of civilized life, and thus ascertained the average annual price of each of them for the whole period from 1845 to 1862, both inclusive. He thus proved that their prices had, "on an average, risen between 1845-1850 and 1860-1862 in the ratio of 100 to 116.2, which is equivalent to a depreciation of gold in the ratio 100 to 86, or by fourteen per cent." He then took seventy-nine minor commodities, less generally in use, the prices of which advance more slowly, since, as they are chiefly articles of luxury, an enhanced price diminishes their consumption: and taking the average of the whole one hundred and eighteen articles, the rise of prices, comparing the same two periods, was "found to be in the ratio 100 to 110.25, corresponding to a depreciation of gold in the ratio of 100 to 90.70, or by about nine and one third per cent." He adds as the final result, "the lowest estimate of the fall that I arrive at is nine per cent., and I shall be satisfied if my readers accept this. At the same time, in my own opinion, the fall is nearer fifteen per cent."

Is there any good reason to believe that this fall in the value of gold has stopped, or has been materially retarded, since 1862? I think not.

¹ Authorities cited in Goschen's parliamentary report on the Depreciation of Silver.

Taking the three periods of five years each which elapsed between 1859-1874, we find the average annual product of gold throughout the world in each of them to be respectively, using the nearest round numbers, one hundred and two millions, one hundred and three millions, and one hundred millions of dollars. In 1875, the same authority puts the product for the year at one hundred and one millions of dollars. There is nothing in these figures which would lead us to suppose that the fall was much impeded; certainly it could not have changed to a rise. Again, while over three hundred and ten millions of pounds sterling were added to the stock of gold in the world during the fourteen years 1849-1862, during the thirteen subsequent years, up to the end of 1875, there was a further addition to this stock amounting to two hundred and sixty-three millions of pounds sterling. We are justified, then, in concluding that a rise in the value of gold during the latter period was impossible.¹

While the fall of gold has been so slow and gradual as to be with difficulty detected, except when we regard its aggregate result after the lapse of a number of years, the depreciation of silver has been sudden and very great. It took place, as we

¹ According to the statistics collected by Mr. Robert Giffen, and published by the Statistical Society of London, in March, 1879, it appears that during the period between 1850 and 1873, the average prices in England of twenty-two staple commodities were generally enhanced, though with several fluctuations, in the ratio of 2200 to 2947, thus indicating a fall of nearly one third in the value of gold. But after the panic of 1873, the prices of the same commodities rapidly receded again, and on January 1, 1879, they were only a trifle above their average during the period 1845-1850. Does this fact prove that the value of gold has not fallen, but only fluctuated, during the last thirty years? By no means. The circumstances were exceptional during this last period of six years preceding January, 1879. The panic of 1873 was a disastrous one in its ultimate effects, not only for America, but for the whole commercial world. Goods in the hands of bankrupt merchants had to be disposed of at any sacrifice. Rents and wages fell, and consumption was diminished, under the pressure of forced economy. Then, too, during these same years, a series of notable improvements and inventions, under the stimulus of necessity, cheapened the processes of manufacture and diminished the cost of transportation both by land and sea. And during the year preceding July, 1880, as we all know, there has been a marked recovery in the prices of staple commodities, which now seem likely to approximate very nearly what was their average before the occurrence of the great panic. On the whole, I cannot doubt that the value of gold during the last thirty years has fallen at least twenty-five per cent.

have seen, in less than two years, and it amounted to twenty per cent. Its causes are easily discovered. Chiefly through the discovery and the rapid development of the silver mines in the United States, there was a sudden and immense increase of the supply; and that was soon followed by an independent but considerable diminution of the demand. These two causes united created something like a panic, and several of the governments of Europe made haste to get rid, so far as was possible, of a commodity which, as it seemed, must rapidly decline in value, and to preserve their standard of value by demonetizing silver. Their action, of course, only enhanced for others the evil against which it was intended to guard themselves. The stock of silver no longer needed for use as money in Germany, or for additional coinage by the states constituting the Latin Monetary Union, was thrown upon the market, where it operated to increase and accelerate the decline which had previously become inevitable.

The Comstock lode has been for our own times what Potosi was for the sixteenth century, though its effects have been developed much more rapidly.

The great increase in the supply of the precious metals from America, which took place during the latter half of the sixteenth century, was mainly owing to the discovery of the mines of Potosi, which were first systematically worked in 1545. Before that year, as we learn from Humboldt, the annual product of both the precious metals from America was only about three millions of dollars. Before 1600, Potosi had nearly quadrupled this amount, having raised it to eleven millions; and the consequence was, within a quarter of a century, that silver fell to about *one third* of its former value. Before 1570, a quarter (eight bushels) of wheat of middle quality was sold in England, on an average of a long period of years, for about *two ounces* of pure silver; about 1600, (still taking an average of many years, so that the exceptionally good and exceptionally bad crops may offset each other,) the price had advanced to a little over *six ounces*, a point from which it has not receded from that day to this.

Now pass over about three centuries, and we come to the effect produced by the Comstock lode in our own day. The

product of the Nevada mines first became considerable in 1861, when the amount of silver raised, according to Dr. Linderman, the Director of the Mint, was about two millions of dollars. It rose rapidly till 1864, in which year the total product of silver in the United States, according to the same authority, was about eleven millions. In 1870, the annual product became sixteen millions, and then rapidly bounded upward, till, in 1875, it had become thirty-two millions. During the last year, 1876, it was probably near forty millions. Combining this product from the United States with that obtained from other sources throughout the world, we find that, up to 1861, the total annual yield of silver had been very steady, for about ten years, at a little over forty millions of dollars, and that it rapidly increased from that date till 1875, in which year it became double its former amount, or almost exactly eighty millions.

In itself alone, this increase, though vast, might not seriously have affected the market for some years to come, since changes affecting the value of either of the precious metals are usually produced with great slowness, much time being required for equalizing prices throughout the world. During this intervening time, large quantities of the metal are, as it were, *in transitu*, or wandering about the world in search of the best market. But at about the same time with this rapid increase of supply, the demand for silver to be exported to British India suddenly fell off. During the four years 1862-1866, cotton was largely exported from India, and it was paid for by heavy remittances in silver, which is the money of that country. Within those four years, India absorbed silver to the enormous amount of two hundred and seventy millions of dollars, this being the excess of the imports over the exports of that metal. Of course, when American cotton came again into the market after the close of the war, the price of India cotton rapidly fell off; it was no longer exported in large quantities, and the drain of silver for its purchase ceased. But another cause then came into operation, which prevented this drain from being at once and entirely checked. English capital was needed in large amounts to aid the construction of Indian railways, canals, and other costly public works; and

the remittances on this account kept up the excess of the imports of silver over the exports, for another period of four years, to the average amount of thirty-five millions of dollars annually. At the end of this second period, the construction of these works practically came to an end, and the drain of silver, so far as this cause was concerned, not only ceased, but was turned the other way. India was then, and still is, heavily in debt to England for these supplies of capital; and the remittances home for interest and dividends became so large that India had but little to receive in merchandise or silver. The effect was, in 1870-1871, that the demand for silver to be sent to India suddenly fell off to less than five millions of dollars; and though it partially recovered the next year, the average for the last four years, ending in 1875, has been only about ten millions annually, against an average of sixty-seven millions a year during the four years of the American war, and of thirty-five millions a year for the four years following the close of that war. As it is improbable that the debt of India to England will be sensibly diminished for many years to come, it cannot be expected that the drain of silver to the East will be resumed to anything like its former extent within the lifetime of the present generation.

The general result is, that, within the last fifteen years, the Comstock lode has added to the world's annual supply of silver about forty millions of dollars; and the demand for that metal, to be exported to India, has fallen off, on an average, almost precisely to the same extent. No wonder, then, that the depreciation of silver should have been as sudden and great as that which we have witnessed, or that the principal states of Europe should have made haste to get rid, as far as possible, of their large stocks of this metal, and to substitute gold for silver as their standard of value. In the opinion of the undersigned, it will be wise for the United States, as far as may be, to follow their example.

England has had no occasion to change her action or her policy. Sixty years ago she adopted gold as her only standard of value, and demonetized silver, which has ever since been used in that country solely for purposes of small change, and is legal tender to the amount only of forty shillings. The quan-

tity of silver in circulation being strictly limited, and being intentionally overvalued from the outset about six per cent., any depreciation of its value in the market does not at all impair its usefulness as subsidiary currency. Foreign silver coins cannot enter into circulation; but, if introduced into the country, can only be sold by weight at their bullion value. The consequence is, that English gold coins are now more generally received at their full value in all the markets of the world than any form of money, and are a generally recognized medium for the settlement of international balances.

In order to secure the advantages of this English system, and to avoid the heavy loss which seemed impending over her currency through the depreciation of silver, Germany took the first step toward the abandonment of her silver standard by a law passed in December, 1871.

The mark was then established as the unit of value, and the gold coins to be issued of the denominations of twenty and ten marks were made legal tender. The value of the twenty-mark piece being made only fivepence less than that of the English sovereign, and threepence less than that of twenty-five francs, the new coins became easily interchangeable with the gold currency both of France and England. Power was also given for withdrawing silver coins, and the coinage of large silver pieces was stopped. The next step was taken in July, 1873, by a law which caused this imperial gold currency to take the place of the various currencies previously in use in the separate states of Germany, and established a subsidiary silver coinage, issued at a little more than eleven per cent. below its nominal value, and made legal tender to an amount not exceeding twenty marks; but to avoid any inconvenience which might arise from too large an issue of the subsidiary silver coins, they were made receivable by the imperial and state treasuries up to any amount. The old silver coins were but slowly withdrawn, the one-thaler piece being continued in use up to the present year. All bank-notes were withdrawn which were not made payable in imperial currency, and none can remain in circulation, or be issued in future, of a lower denomination than one hundred marks, or about five pounds sterling. This was an important feature of the law, as bank-notes had previously

been issued of as low a denomination as one thaler ; and the withdrawal of all of them *below* five pounds must greatly increase the use of coin in small transactions. Under these laws, up to June last, new gold coins had been struck to the amount of seventy millions of pounds sterling. Of the old silver withdrawn, and not replaced by the new silver coinage, up to the 20th of April last, sales had been made to the extent only of about six millions sterling, which is too small an amount to have had much direct influence on the depreciation of silver before that date. It is probable, however, that a much larger quantity remains to be melted down and sold, though even an approximate calculation of its amount is stated by the German authorities themselves to be impossible.

Most of the other countries of Europe, excepting those which have in use a depreciated paper currency, have imitated the example thus set, through preventing the further coinage of silver except for purposes of small change, and thus limiting the amount of it in circulation. None have gone so far, however, in this respect as Germany ; but they have only done enough to prevent the influx of the now cheapened silver from driving gold out of circulation, and thereby depreciating their standard of value. Denmark, Norway, and Sweden virtually adopted the gold standard in 1872-1873, and have since largely imported gold, and have sold silver amounting to over ten millions of dollars. Holland for some time pursued a vacillating policy, though attempts to alter her laws respecting coinage were made as early as October, 1872. But at last, in June, 1875, her parliament passed an act prohibiting the coinage of silver indefinitely, and allowing the coinage of gold. Under this law, a gold ten-florin piece has been struck ; and during the next nine months, fifty-six millions of florins in gold were issued, and have taken the place of an equivalent amount of silver, which has been discharged from circulation. France and the other states (Belgium, Switzerland, Italy, and Greece) constituting the Latin Monetary Union, have adopted an expectant policy, merely restricting within narrow limits the further coinage of silver ; though the French minister of finance recently proposed a law authorizing the government to prohibit entirely the use of any more silver five-franc pieces.

France, which had previously been almost drained of silver, first through purchasing cotton from India during the American war, and next by the payment of the German indemnity, has replenished her stock of that metal through the natural laws of trade, without any special legislation, but merely by contracting her paper currency, which for a time took the place of the exported silver money. She is probably deterred from adopting exclusively a gold standard, through her apprehension of the effect which would be produced in lowering the price of silver by throwing her large stock of it upon the market, in which case, the cost of filling up the circulation with gold would be very considerable.

As already remarked, this action of the European governments in partially discarding silver from circulation as money has tended in two ways to increase the depreciation in value of that metal; first, by throwing large quantities of it upon the already burdened bullion market, and secondly, by narrowing the field for its employment, and thereby lessening the demand. But to suppose that its depression in price *originated* in their action on the currency, and is entirely attributable to the measures which they adopted, would be to invert the relation of cause and effect. Rather its previous fall in value, and apprehended further decline, caused them suddenly to demonetize it, as otherwise their general and nearly simultaneous action in regard to it would have been arbitrary and motiveless. There is no conceivable reason why they should all, within a brief period, have made haste to get rid of silver, if it had not appeared to them to be already rapidly sinking in value while on their hands.

We have next to consider whether the causes which have produced the recent changes in the relative value of gold and silver are "permanent or otherwise." The question herein indicated does not admit at present of a determinate answer. We may form a somewhat loose estimate of the probabilities affecting the immediate future, perhaps for the next six or eight years; but if we attempt to look farther, or to arrive at more definite results, events as unexpected and as vast in their influence as the gold discoveries in California and Australia, or as the finding of silver ore in the Comstock lode, may falsify

all our calculations. Of all human industries, mining the precious metals is the most precarious and uncertain. Legislation which is to affect interests and industries so large and complicated as those which depend upon the state of the currency in the United States, and upon the preservation of the standard of value, cannot be safely based upon vague estimates, or upon the interested statements and valuations made by large holders of stock in silver mines; but explorations recently made upon the spot by the Director of the United States Mint, by Prof. R. E. Rogers, and other eminent geologists and mineralogists, and by mining engineers, leave little doubt that the quantity of silver ore already partially exposed to view and measurement in the Comstock lode is enough to keep up the average product of that metal at least to its present amount for some years to come.¹ It is not probable, then, that the supply will soon fall off, and there are no indications that the demand for the employment of silver, either in the arts, for monetary purposes, or for exportation to the East, will again become as extensive within the next five years as it was five years ago. On the contrary, the evidence goes to show that electro-plated forks, spoons, and ornaments are already, to some extent, taking the place of the corresponding articles, far more costly, which contain a larger proportion of pure silver. No one expects that England, Germany, Denmark, Sweden, and Norway will soon reverse what is now their established policy, by again bringing silver into circulation as money, except for the very limited purposes of a subsidiary currency; and if not, then all these countries, excepting England, must continue for some time to be sellers rather than buyers of this metal. Moreover, the facts already mentioned make it highly probable that France, Holland, and Belgium may soon adopt entirely the monetary policy

¹ This expectation is not likely to be fulfilled. During the present year (1880), the indications are, although there is still silver ore enough in the Comstock lode, that the difficulty and cost of mining and extracting it at great depths are so much enhanced that it cannot much longer be raised at profit. The supply of silver from this source, therefore, must be greatly diminished, even if the mines are not abandoned altogether. On the other hand, the recent discoveries at Leadville and other districts in Colorado bid fair to compensate the decreased production in Nevada. For the fiscal year 1879, the Director of the Mint estimates the product of silver from all the mines in the United States at about forty millions, of which Colorado alone furnishes nearly twelve millions.

of Germany, as they have already adopted it to some extent; and neither British India nor China seems likely soon to have again so large an excess of exports over imports as will enable either of them once more to exercise its extraordinary power of absorbing silver currency. There may be some further reaction from the sort of panic in the market which recently depressed the price of standard silver to less than 50*d.* per ounce; but the fluctuations of value in the markets of the world caused by speculative movements or panics are of short duration and very limited extent. Silver may not again fall as low as it was in July, 1876; but it would be unreasonable to expect that it will soon recover and permanently maintain the price which it commanded in 1870.

The next subject of inquiry referred to this Commission concerns the policy of a "restoration of the double standard in this country, and, if restored, what the legal relation between the two metals, silver and gold, should be."

As the value of any commodity whatever depends primarily upon its cost of production, which is constantly varying, and secondarily upon its supply and demand, which are also extremely variable, as is shown by the incessant fluctuations of market prices, it is obvious that there cannot be an *absolute* standard of value. Such a standard means something fixed and unchangeable, by their relation to which all other valuables may be measured. Now, there is no such commodity known; everything varies in value from one week to another, both from intrinsic causes peculiar to itself, such as its inherent difficulty of attainment, and from extrinsic causes affecting those agents, labor and capital, by which alone this difficulty can be overcome. The best that can be done is to select an approximate standard; that is, some one commodity which seems more stable than any other, and establish that by law as *the* standard by which the values of all other commodities are to be measured. Legislation is competent to do this, and practically has done it both in England and Germany, by establishing a certain number of grains of pure gold, coined either into a sovereign or a mark, and declaring that this shall be the common measure of value. But legislation is not competent to select *two* such commodities, and to declare that they shall *both* be the standard or

common measure ; or, in other words, that there shall be a *double* standard. To attempt to do so is as absurd as it would be to declare by law that two clocks should both be the standard for measuring time, though, as everybody knows, no two clocks can be made which shall keep perfect time with each other.

This theoretical view of the matter is amply confirmed by experience. Every attempt to establish the so-called "double standard" has been a failure. The first step toward causing any commodity to become a standard of value is to make it a legal tender for the payment of debts. But though the law may declare that either of two commodities shall be legal tender, only one of them, and that the cheaper one, is actually adopted as a medium of payment. If gold and silver be the two commodities chosen, and the legal relation between them be made to conform to the ratio of their market prices at the time of the enactment, the fluctuations of the market will speedily change that ratio ; and then the overvalued one speedily pushes the other out of circulation, and becomes itself the sole standard of value. It appears from the table already referred to, showing the monthly fluctuations in London of the gold price of standard silver per ounce, that this price remained unaltered for as long a period as four months only once in forty-three years. Usually it varied every month, and but seldom remained fixed for two successive months. But any such departure of the market price from the relative value of the two metals as established by law must cause that one which is overvalued, or of which the nominal exceeds the real value, to displace the other and take the whole circulation to itself. Always the bad money pushes out the good, as every one will adopt the easiest and cheapest means of paying his debts.

Thus France attempted, as early as 1803, to establish a double standard, and fixed by law the relative value of the two metals at 1 to 15.5. This ratio made the legal price of pure silver to be 28.64 grains of pure gold per ounce. But for over forty years the market price of silver did not, on an average, exceed 28.25 grains of pure gold per ounce, so that the law overvalued it more than one per cent. To this extent, then, in France, silver was worth more as coin than as bullion, while

gold was worth more as bullion than as coin. There was a profit of about one per cent. in carrying silver to the mint to be coined, and in melting up or exporting gold. Of course, silver flowed into France and filled up the circulation, while gold coins disappeared, or could be obtained only at a premium. In those times, when one was paid even so small a sum as one thousand francs, he received his bulky and heavy money in a canvas bag, and had to hire a porter or a cab to convey it home. During the six years before 1852, the excess of the *imports* of silver into France over the exports was more than twenty-eight millions sterling.

The discoveries of gold in California and Australia about 1850 reversed this state of things, as it was foreseen that gold must fall in relative value. Hence the market price of silver rose above its mint valuation, and consequently, the amount of gold presented for coinage in France became immense, and there was a drain of silver, vast quantities of which were melted down and shipped to India. The inconvenience which resulted from the want of small change had to be met by reducing the small coinage to the state of a subsidiary or token currency, all pieces of two francs and under being much overvalued, so that they could not be exported or melted up without considerable loss. But the silver five-franc piece was nominally retained at its old valuation, and to fill the gap caused by its practical disappearance, gold five-franc pieces were coined to a large amount. Like our own gold one-dollar coins, however, these were found to be inconveniently small, and the coinage of them ceased even before the recent depreciation of silver brought the silver five-franc pieces again into circulation. During the six years, beginning with 1852, the excess of the *exports* of silver from France over the imports was more than forty-five millions sterling.

Hence it appears that the French attempt to establish a double standard has been a total failure. France had silver for her only standard from 1803 till 1850, and gold for her only standard ever since. Even now, since the recent great depreciation of silver, restricting the coinage of that metal within very narrow limits is a virtual adherence to the single standard of gold. The corresponding attempt to establish a double

standard in the United States resulted in a similar experience of loss, inconvenience, and failure.

A law of Congress passed in 1792 established the United States mint, and so regulated the coinage that both 24.75 grains of pure gold and 371.25 grains of pure silver were made legal tender for a dollar. This was an attempt to establish the double standard on the ratio of 1 to 15, which was probably the actual ratio of the market prices of the two metals at that epoch. But silver immediately began to decline in price, and before 1800 it had reached the ratio of 15.42; while in 1803, as we have seen, even the French ratio of 15.5 had become too small. Of course, the overvalued silver filled up the circulation almost entirely; the whole coinage of gold for forty years was less than twelve millions of dollars; and this little was for the most part either preserved as a curiosity, or melted up and exported. A gold coin was seldom seen, and silver was virtually the only standard. This was not the worst. As the silver dollar had been made to conform almost precisely in weight and fineness to the Spanish milled dollar, Spanish quarters, eighths, and sixteenths, usually much debased by abrasion and clipping, poured into the country through our trade with the Spanish West Indies and South America, and soon formed almost our whole fractional currency. A small Spanish coin called a *pistareen*, so much worn as hardly to be worth seventeen, passed current for twenty, cents. Vainly did the United States mint issue American fractional coins of full weight and value, as these were soon melted up, and the bullion sold at a high profit for the worn Spanish coins which were equally current. Never was there a better illustration of the principle that bad money invariably displaces the good.

The law of 1834 remedied these evils by actually lowering the standard more than six per cent., and thereby establishing the relative value of the two metals at 1 to 16. Instead of 24.75, only 23.22 grains of pure gold were coined into a dollar, and thereby the par of exchange with England, which had been about \$4.56, was raised to \$4.87, for the pound sterling. Moreover, as by the ratio thus established silver was undervalued about three per cent., gold began to be issued in large quantities and came into general use, while silver pieces of the

denomination of one dollar were almost entirely thrown out of circulation, and the silver fractions of a dollar were kept in use only through the necessity of having some small change, and because, being much handled, they soon lost a portion of their weight by abrasion. The nuisance of the much worn Spanish coins was gradually abated by a general refusal to accept them at more than four fifths of their nominal value. Practically, then, the attempt to establish a double standard had resulted in lowering the whole standard more than six per cent., and in establishing first silver, and then gold, as the sole measure of value.

In less than twenty years, the fluctuations of price in the market again created a necessity of tinkering the so-called "double-standard" currency. Soon after 1850, silver rose relatively so much in price that even the smaller silver coins began to be melted up and sold as bullion. It became difficult to effect small purchases, or to obtain "change" for a dollar. Congress had now to undo what it had done in 1834. But its action was reversed, not by restoring the gold dollar to its former full weight and value, but by diminishing the quantity of silver which represented a dollar just about as much as it had lessened the quantity of gold in the dollar nineteen years before. The law of 1853 virtually surrendered the double standard, and made gold coin the only *available* legal tender for any debt over five dollars; for though the former one-dollar piece, containing 371.25 grains of pure silver, was not expressly demonetized, it had gone out of use, and practically remained out of use, in the domestic currency, because its value as bullion had come to exceed by about three per cent. its value as coin. But the silver fractional denominations, from half a dollar downward, were reduced to the state of a subsidiary or token currency, by so far diminishing their weight that a dollar's worth of them contained only 345.6 grains of pure silver, and by making them legal tender only for an amount not exceeding five dollars.

Thus gold was maintained as the single available standard for nine years longer, when, in 1862, the issue of an inconvertible paper currency, and making it legal tender, practically abolished every standard of value, and introduced the state of

uncertainty, of wild fluctuations of prices, and consequent reckless speculation, from the evil effects of which the country has not recovered up to the present day. In 1873, however, probably as a precaution against the great depreciation of silver which was even then foreseen, Congress took the last step toward the legal establishment of the single gold standard by demonetizing silver altogether, making all our silver coins legal tender only for an amount not exceeding five dollars.¹ The gain which would accrue from manufacturing silver bullion into coins at a nominal value largely exceeding its cost was constituted a special fund for making good "the wastage;" it might more properly be used to meet the heavy loss to which a silver currency is always subject from abrasion and clipping.

In the opinion of the undersigned, it is expedient to take one more step toward assimilating our system of metallic currency to that of England and the commercial world generally. By diminishing the quantity of pure gold in the dollar only three fifths of one grain, or considerably less than half of what the law of 1834 subtracted from it without producing injury or complaint, our American half-eagle or five-dollar piece would become almost the exact equivalent of one pound sterling, and would differ only by a very small fraction from the value of twenty-five (gold) francs in France and the other States of the Latin Monetary Union, and from twenty (gold) marks in Germany. Already the English sovereign, or one pound sterling, is a recognized portion of the actual currency of such countries as Portugal, Brazil, and Egypt, and is practically current at its full value in every civilized country. Austria has recently coined and issued gold four-florin and eight-florin pieces, which, as practical equivalents respectively of the French ten-franc and twenty-franc coins, are easily expressed as definite portions of the pound sterling. Hence the slight change here recommended would be attended with the following important advantages:—

1. It would be a long step toward establishing one monetary unit, denomination of account, and standard of value for the whole commercial world.

¹ The act of 1873 put a stop to the coinage and issue of the one-dollar piece containing 371.25 grains of *pure* silver, and declared that the one-dollar gold piece, containing 23.22 grains of *pure* metal, should hereafter be the unit of value.

2. It would greatly facilitate the computation and settlement of international balances, accounts, and exchanges.

3. It would be the strongest possible safeguard for the future stability of the standard of value, as all nations would be interested in its preservation, and it could not be effectively altered without their unanimous consent.

4. In making remittances to other countries, it would no longer be necessary to melt the coins and have the bullion re-coined at considerable charge in a foreign mint. The government would no longer be put to the heavy expense of coining and recoinage the same bullion, which had been first sent abroad, and then returned, through fluctuations in the balance of trade.

5. As American gold coins would be equally current everywhere with English sovereigns, New York would share at least one of the advantages which have made London the banking-house and commercial centre of the civilized world.

6. In the language of Professor Jevons, "a world-wide gold currency of unimpeachable fidelity and excellence would be obtained "alike from British, French, German, and American mints."

7. It would much facilitate our return to specie payments, the present premium on gold, five and one half, being reduced immediately to about three, per cent.

Justice, however, requires that all debts and contracts expressly made payable in gold, and outstanding on the date of the law authorizing this change in the coinage, should be discharged only by tender of dollars each containing 23.22 grains of pure gold, or by their equivalent.

After what now has been said, it is hardly necessary to consider the third subject proposed by Congress to this Commission, namely, "the policy of continuing legal-tender notes concurrently with the metallic standards." As it has been proved both by theory and experience that a *double* standard is an illusion and a failure, every attempt to establish it having led to frequent changes of legislation, and to great inconvenience and uncertainty in commercial affairs, any project for creating a *triple* standard ought to be summarily rejected as impracticable and absurd. The law may say that either a gold dollar, a silver

dollar, or a paper dollar shall be indiscriminately *legal* tender; but the only *actual* tender ever made for the payment of a debt will be that one which, at the time, is the cheapest of the three. Hence the most effectual means of rapidly debasing the standard, that is, of depreciating the value of a dollar, will be to authorize any one to cancel debts outstanding against him by proffering in payment that one out of three different kinds of dollars which happens at the moment to be of the smallest value, especially when, as during the last year, the three are rapidly and largely changing their relative values. Only last July, the so-called "trade dollar," the heaviest and most valuable one ever coined, was worth about .86, and the "greenback" paper dollar about .89, of a gold dollar. Five months later, these proportions were reversed; the trade-dollar had risen in value to .94½, and the greenback to 92½, in gold. What sort of a *standard* would they have been, either separately or together, when they are liable to such fluctuations both in their relative and absolute values in less than six months? As there was no apparent change in the average price of commodities in general between July and December, 1876, we may be sure that the value of the gold dollar during that interval remained without alteration. Yet, under the attempt to create a triple standard, it is certain that the gold dollar would have been the only one which, during those five months, could not have come into use.

Whatever, then, might be the *intention* of Congress in attempting to create a double or triple standard, it is certain that the actual consequence of such attempt must be to exclude gold altogether, and to make either silver or the legal-tender note the only measure of value, and the only medium for the payment of debts. We have, therefore, merely to consider whether it is expedient and just to establish either of these two forms of money, in preference to gold, as the sole standard.

Money, properly so called, has two perfectly distinct functions to perform. It must be capable of use *both* as a standard of value and as a medium of exchange. It is obvious that the former of these functions is by far the more important. As to the latter, almost any commodity, even any ticket of transfer or token of debt, though without any intrinsic value, may be

made to serve perfectly well as a medium of exchange, the question which of them is to be preferred for this purpose being determined solely by considering which is the most convenient. Silver, copper, nickel, bank-checks, railroad-tickets, postage-stamps, accounts-current or offsets of sales against purchases, and the like, may serve as media to facilitate the transfer of those commodities which are the only real objects of barter and sale. What is called a subsidiary or token currency, whether it be silver, copper, or nickel, is of this nature, the law affixing a definite limit both to the amount of it in use, and to the extent to which it shall be a legal tender, and also giving it a conventional, often differing from its intrinsic, relation to the real measure of value.

Far otherwise is it with the other function of money, that of serving as a standard of value, as on the proper execution of this office some of the most momentous interests of the whole community are entirely dependent. The very life of trade, and of confidence between man and man, depends on the due performance of contracts, on the successful maintenance of a system of credit, and on the anticipation of what will be the relative value of money and commodities at some future day. Very few mercantile transactions are really completed at the time when the bargains are first made, or when the commodities affected first change hands. Nearly all of them, either directly, or in their necessary and intended consequences, extend into a more or less remote future. The trader buys only in order to sell again, it may be the next week, the next month, or the next year. In every commercial community, far the larger portion of the sales which are effected are made on credit; that is, on promises of payment at some future day. And the debt thus contracted, through the agency of banks and other financial institutions, becomes itself an object of barter and sale, which are again dependent on trust in the future. Even in the case of cash sales of commodities for speedy consumption, the purchaser's choice of the time and place for the transaction usually depends on his estimate of what prices are, or will be, elsewhere or on some future day. All such bargains, expectations, and promises must be expressed, and, if necessary, registered, in the common denomination of account, — in francs, pounds

sterling, or dollars; and any uncertainty as to the future value of this denomination of account must discourage individuals from engaging in the transaction, or, if not foreseen, must work hardship and injustice to them in the result. And these evils may all be caused, not only by any actual alteration of the standard within the period of time belonging to the transaction or the contract, but by any reasonable grounds of fear that, within that time, it *may* fluctuate in value. Any depreciation of the currency, if foreseen a few weeks before its occurrence, may be so far anticipated and exaggerated in its effects upon the market, that a very considerable rise of prices may take place some time *before* the currency is depreciated at all; and then, owing to the reaction of disappointed hopes and fears, the real depreciation, when it comes, may be contemporaneous with a considerable fall in prices. Trade thus becomes a lottery, and legitimate enterprises in commerce and manufactures must either be abandoned altogether, or kept up under a heavy cost of insurance against the uncertainty of the returns. The enhancement of prices produced by such insurance takes place without any of that compensation to the consumers, embracing the whole laboring class in the community, which arises from a corresponding increase in their income or wages.

In the opinion of the undersigned, to adopt silver for the standard dollar would be a greater discouragement to manufactures and trade, and would do more harm to all the great industrial interests of the country, than even the continuance of the present wretched system of an inconvertible paper currency. Not only during the last year has silver undergone greater and more rapid fluctuations in price than paper, but the causes of its fluctuation are more difficult to be discovered, and less controllable, because wholly out of reach by legislation. By a very moderate and gradual contraction of the legal-tender currency, it is certain that Congress can prevent the paper dollar from sinking below its present value, and, by a few other well considered measures, can steadily raise its value to par without spreading alarm, or creating any disturbance in the markets, or perilling any interest but those of the stock-jobbers, even before the time now fixed by law for the resumption of specie payments. But in view of recent experience,

who can tell what the price of silver will be six months hence, or what legislative enactment can increase or diminish that price a single penny? As well might a legislator attempt by taking thought to add one cubit to his stature. Yet the only apparent motive for urging the adoption of a silver standard in the United States, at the very time when all Europe seems to be on the point of discarding it, is the vain expectation that an act of Congress may have the effect, in the stock-jobbers' phrase, of *bulling* the price of silver throughout the markets of the world. Granted that such an act might create a market for the silver which still remains to be sold by Germany and other European countries, it certainly could not restrict the productiveness of the mines in the Comstock lode, or restore to British India and China their former power of absorbing the surplus silver of the civilized portions of the globe. It would not be becoming for the dignity, as it certainly would be prejudicial to the interests, of the United States to engage in an operation equivalent to stock-jobbing, by making heavy purchases on a falling market of a commodity generally discredited elsewhere, in the idle hope of raising and controlling its price. The benefits of such an operation, if any, would be reaped only by the stockholders in silver mines, while the inconvenience and loss would be sustained by the people.

There are special reasons why silver is less eligible than gold for the chief place in a metallic currency. Its weight and bulk are too great in proportion to its value, so that it is very inconvenient for use in large transactions, and for the settlement of international balances. Its proper place is a subordinate one, being well fitted for small retail purchases and adjusting the fractional portions of accounts. And this place, as a subsidiary or token currency, seems to be now determinately marked out for it throughout Europe. We learn from the Director of the United States mint, that one million of dollars in gold coins weighs 1 ton, 16 hundred-weight, 86 pounds; while the same value in "trade-dollars" amounts to 30 tons, and in subsidiary silver coins, to a little over 27 tons, 11 hundred-weight. Any one who was in France about 1840, when silver was virtually the only standard, and no bank-bills were in use of a less denomination than one hundred francs, will re-

member how burdensome and inconvenient this form of money seemed.

Another and more serious objection to the use of silver currency is its liability to considerable loss of weight and value by abrasion and clipping. Gold coins are but little exposed to deterioration from these causes. Having considerable value in small bulk, they are closely scrutinized when offered in payment, and if light in weight are rejected, so that worn and clipped coins, so to speak, never get a foothold in the currency. But silver pieces, especially the fractions of a dollar, because their value is comparatively trifling, are not closely examined, and so still pass current, though their original value has been much impaired.

By a careful and extensive series of experiments, weighing a large number of (gold) sovereigns taken at random from those which had been a long or short time in circulation, Professor Jevons ascertained that the loss by abrasion on each coin was almost always exactly proportional to the number of years it had been in use. He was thus enabled further to ascertain, that the average annual loss of weight by each sovereign was forty-three thousandths of one grain. In twenty-six years of use, therefore, it will have lost by abrasion about one per cent. of its value. In the same manner, he found the average annual wear of the *half*-sovereign to be sixty-nine thousandths of a grain, or more than half as much again as that of a whole sovereign. The smaller coin, therefore, loses by friction one per cent. of its value in about sixteen and a quarter years, this greater loss being attributable to its exposing more surface in proportion to its weight, and to its being more rapidly handled in purchases at retail.

We do not know that any equally careful experiments have been made to ascertain how much silver coins lose annually by abrasion; but a tolerably good estimate may be formed by comparison of the two cases. Other things being equal, the loss will be proportioned to the amount of surface exposed to friction, and also to the frequency and carelessness with which the coins are handled. Now, a shilling exposes to wear about as much surface as a sovereign, and therefore, from this cause alone, a pound sterling in silver shillings will lose annually by

abrasion twenty times as much as the same value in one gold piece. Moreover, in the numberless petty transactions of every-day life, shillings are circulated far more rapidly and carelessly than sovereigns, and their consequent loss by friction must thus be much increased. Then the estimate formed by the best authorities seems a reasonable one: that the annual loss on silver coins by abrasion is at least one per cent.

Hence it appears that the cost of repair, the difficulty of maintaining the currency in full weight and good condition, is at least twenty-six times as great for silver coins as for gold ones. If the government neglects its duty of making good at considerable expense this annual deterioration by wear, the state of a silver currency soon becomes deplorable. After some years of ordinary active use, the coins betray their loss of weight by their worn and defaced appearance; and the evil is increased and made universal by dishonest persons, who pick out from the circulation the pieces freshly issued from the mint, and others which happen to be less worn, and by punching or clipping reduce them to the average, or below the average, of debasement. Also, as the coins now pass perhaps for ten per cent. more than they are worth, foreign silver coins of inferior weight are attracted from neighboring countries to a place where they are current for a higher value than they possess at home; and the task of expelling these intruders is by no means an easy one. Already, though our fractional silver currency has been but very recently restored to use, worn Canadian and Spanish "quarters" and punched American coins have begun to appear in circulation. If remedial measures are not adopted, our silver currency will soon be again in as bad condition as it was just before 1830, or as that of England before the recoinage of 1696, or as that of Germany before her abandonment of the silver standard in 1873.

The evil in question is not so considerable, and a remedy for it is not so difficult to be had, if silver be restricted to its only proper monetary function, that of furnishing a subsidiary or token currency. No one is then obliged to receive the deteriorated coins except to the small amount for which they are legal tender; and as the whole quantity in circulation is not very great, and the government have reaped a large profit by

issuing it at a rate considerably above its intrinsic value, this profit may properly be made a fund for defraying the expense of constantly withdrawing the light coins, and filling the vacuum with others of full weight fresh from the mint. In this way, England and France of late years have kept their subsidiary silver coins in perfectly good condition, the former country usually issuing new and perfect pieces each year to the amount of £300,000, yet without at all increasing the volume of this portion of the currency, because old and worn coins to the same amount are withdrawn.

But if silver is made legal tender for any amount whatever — and that is what the project of a double or triple standard means — gold will disappear from circulation, no fund will be available to defray the considerable cost of annual repairs, and both the United States treasury and the country generally will be reduced to the condition in which British India is already placed, with liabilities both abroad and at home, which are payable only in gold, but with taxes, wages, and dividends receivable in a metal which may again, as during the last year, lose sixteen per cent. of its value within six months.

A few persons who do not understand the subject imagine, that if the Mint and the Treasury be required, under the system of a double standard, freely to exchange gold dollars for silver ones at par, or the reverse, whenever such exchange is demanded, then neither metal *could* fall below the value of the other. Certainly it could not, within the limits of the country foolish enough to act thus, and during the few weeks which could elapse before its mint and treasury would be drained of their last gold dollar. For, suppose the price of silver should fall in the London market only two per cent. below its former value relative to gold; then any person, by shipping thence nine hundred and eighty thousand dollars' worth of silver bullion, could receive for it here one million of dollars, and could repeat this operation indefinitely, or until stopped by the bankruptcy of our mint. A compulsory union of the dearer metal with the cheaper one could permanently establish an equality of value between them only if the unequal marriage were sanctioned by all the nations of the earth. But as probably both England and Germany would at once forbid the banns, this

project of M. Czernuschi is not likely to be soon carried into operation.¹

The undersigned sees no objection, however, to a considerable enlargement of the limits within which the *subsidiary* silver currency is now issued and made a legal tender, paper money being withdrawn to an extent equivalent to the enlarged issue thus made, as has been already done in the case of the silver fractions of a dollar, so that the aggregate volume of the currency shall not be increased. An important step would thus be taken toward a resumption of specie payments, and a reasonable concession would be made to those who desire a larger use of silver money. Dollars might be coined each containing 345.6 grains of pure silver, be made legal tender to an amount not exceeding twenty dollars, and be issued only in exchange for paper money, whether greenbacks or national bank notes, of any denomination below five dollars, the notes thus received in exchange being immediately cancelled and destroyed. A burdensome redundancy of silver thus thrown into circulation might be prevented by making it receivable by the Treasury to any amount, in payment of all dues to the government which are not by law made payable only in gold. These silver dollars would be a convenient and unexceptionable medium of exchange, and as they would not be a standard of value, they could not introduce any uncertainty about the just fulfilment of contracts. They could not be melted up or exported without loss, and as receivable by the government to any amount, they could not become depreciated in the market. The amount of one-dollar and two-dollar notes now in circulation is about sixty-five millions of dollars. These would all be gradually withdrawn, and their place would be filled by silver coin in all retail transactions.

We come now to the last subject which this Commission is required to consider, namely, "the best means for facilitating the resumption of specie payments." In the opinion of the

¹ They have forbidden the banns. At the International Monetary Conference, convened at the request of our government at Paris, in August, 1878, the Commissioners of no one of the European nations there represented were willing to sanction any attempt to cause gold and silver to circulate side by side at a fixed ratio of value. The project was summarily denounced by them as Quixotic and impracticable.

undersigned, the two measures already herein proposed would go far toward accomplishing such resumption without creating any disturbance in the markets, without any injurious shock of sudden transition, and without harming any class or interest that can rightfully claim to be protected by the government. Each of these measures is a concession to one or the other of the only two parties who now appear to be hostile to such resumption. Reducing the quantity of pure gold in the dollar to 22.6 grains, through bringing it so much nearer the present value of the legal-tender (greenback) note, favors those of the indebted class who fear that resumption will make it more difficult for them to pay their debts. Substituting silver for all notes below the denomination of five dollars will be as large a measure of protection to what may be called "the silver interest" as can reasonably be asked from Congress. Should these two recommendations be adopted, it is reasonable to believe that the premium on gold would continue to decline as fast, and also as uniformly and innocuously, as it has done since March 9, 1876; and since its fall, within ten months after that date, from fifteen to five and a half per cent., so far from creating any injury or disturbance, has been attended with a considerable growth of confidence and revival of trade, there are no grounds for apprehending any evil consequences through its further decline from three per cent. to zero. The paper dollar having thus risen to its par value, specie payments might safely be resumed some time before the period now fixed by law, as the amount of surplus gold already in the treasury would be quite sufficient to meet the very moderate demands which would then be made upon it to redeem its notes.

In order to make sure of this further decline, however, and also to diminish what would still be the excessive volume of paper currency, the Secretary of the Treasury should be enabled and required gradually to lessen the amount of it in circulation. He is already authorized to sell United States bonds for gold as a means of providing for resumption, and also to sell the gold so obtained and receive legal-tender notes in payment. These notes he should be required to destroy, to the amount of three millions of dollars a month, none others being issued in their place. This would only be to continue, under

the authority of law, the same rate of contraction which has spontaneously taken place during the last twenty-two months. These preliminary measures being adopted, Congress might safely and justly repeal all laws which "make anything but gold and silver coin a legal tender in payment of debts."

It is evident, then, that the accumulation of more gold in the Treasury is not a necessary means or preliminary for the resumption of specie payments. The legal-tender notes originally issued in payment of debts due *from* the United States are redeemed and discharged when received as an equivalent for the same amount of debts due *to* the United States, none others being issued in their place. In fact, the process of redemption is constantly going on through the receipts from internal taxation and other sources; and this process is made final, simply by not paying out again these notes or any others, and making what provision may be necessary to discharge the ordinary obligations of the Treasury, either by imposing additional taxes or by the sale of bonds. During the last fiscal year, about one hundred and twenty-five millions of these notes were received as internal revenue and from the sale of the public lands; and if none others had been issued in their place, resumption would, before this time, have been complete, and accomplished, too, by a process so gradual and harmless that none but those who closely watch the financial operations of the government would have been aware that anything unusual was going on.

What is to be feared from making silver an unlimited legal tender is not so much a depreciation of the standard of value, as the recurrence of the sudden and great fluctuations in the market prices of commodities, and of the reckless speculation in commerce, mining, and manufactures, which are properly attributable, as in the case of paper money, to having no standard at all. What we dread is not the *fall*, but the *fluctuation*, in value of the would-be standard, and the feeling of uncertainty thereby produced; and this dread is only confirmed and enhanced by the recovery in the market price of silver, within the last six months, from about 47*d.* to 58½*d.* an ounce, being about all that it had lost during the earlier part of the year 1876. Against this uncertainty, and its depressing effect upon all legitimate enterprise, industry, and trade, nothing can pro-

tect us. The discovery of more *bonanzas* in the Comstock lode, the further demonetization of silver by France and Holland, or a still more unfavorable balance of trade in British India, may send the price of that metal down again during the next half year lower than ever. With such a contingency hanging over it, commerce does not start into full activity and industry is paralyzed.

Those who still fear that a resumption of gold payments would be prejudicial to our financial interests, and do wrong as well as harm to the indebted classes, ought to learn from the experience of the last three years, and especially from that of the year which has just ended, that their apprehensions are groundless. The war prices, the wild speculations, and excessive personal expenditures, which had been created and fostered by the immense issues of paper money in 1864 and 1865, and maintained by the convulsive efforts of those who had been enormously enriched by these events, reached at length their inevitable issue, and came to an end all at once in the crisis of September, 1873. More than ever before during the present century, rents and prices fell, real estate ceased to be marketable, merchants went into bankruptcy, railroads passed into the hands of receivers, manufactories stopped, the incomes of persons not in active business but living on their private means were cut off, and the laboring classes were thrown out of employment. Great as was the calamity, however, after the storm had cleared the air, a revival would probably have begun in less than a twelve-month, as had been the case in all former commercial crises, had not the Secretary of the Treasury so far strained his authority beyond all law or precedent as to throw upon the market, without any express sanction by Congress, an additional issue of twenty-six millions of paper money, with the threat that it might be followed by eighteen millions more. Then, indeed, people did not know what to expect; confidence broke down entirely; capitalists preferred to allow their funds to remain idle, rather than to make loans which might be repaid in dollars not worth half as much as those which had been borrowed; and what might have been merely a temporary convulsion, followed by the glow of reviving health and strength, passed over into that general pa-

ralysis of trade and industry which we have witnessed during the last three years.

Experience has demonstrated that the cause of this prolonged evil, which has brought multitudes of industrious and deserving persons to the brink of penury and ruin, was not what the inflationists call a "lack of money." When the calamity was at its height, as it was throughout 1875 and the early part of 1876, there was no lack, but rather a superabundance, of money, the banks and the capitalists having more than they knew what to do with. Hence they were eager to let it on undoubted security, such as government stock, and *on call*, as the phrase is, so that there would be no time or opportunity for its depreciation, at as low a rate as three, or even as two and one half, per cent. With a circulation then amounting to nearly seven hundred and forty millions of paper dollars, which at that time were worth about eighty-seven cents apiece, and which, because commerce and industry were paralyzed, were freely offered on call at three per cent. interest, it would surely have been absurd to call for the issue of "more money" as a means of rescuing the country from its difficulties.

At length, especially during the latter half of the year 1876, the evil began to cure itself, and that, too, by means which clearly indicate that the undue inflation, and consequent fluctuating value, of the currency had been the sole original source and the aggravation of the difficulty. Spontaneously, without any aid from legislation, or any concert between individuals or the banks, the paper currency began to contract itself. Unable to make any profitable use of their funds, because credit was dead in the community, and the wings of enterprise were clipped, many of the banks voluntarily surrendered their circulation altogether or in part, and either retired from the business, or confined their operations to what are the only two proper functions of a banking institution, — those of deposit and discount. They were thus relieved from some heavy taxes, and were able to withdraw their United States stock, deposited as security to redeem their circulation, and by selling this stock at the advanced prices which it commands in the market, because payable in gold only, to make greater gains than were possible from lending their own notes at three per cent. interest.

Though the act of January 14, 1875, repealed all limits to the *increase* of national-bank circulation, and thereby invited a further inflation of the currency, it appears from the last report of the Comptroller of the Currency, that the total *decrease* of legal-tender notes and national bank notes between January 14, 1875, and November 1, 1876, has been over forty-five millions of dollars. And this process of diminution is still going on, the amount of legal-tender notes on deposit with the Treasurer, for the purpose of still further retiring bank-notes, being, on November 1, 1876, nearly twenty-one millions, so that the aggregate amount of paper money voluntarily withdrawn from circulation, in less than twenty-two months, has been about sixty-six millions, or nine per cent. of the whole quantity in use.

And what has been the consequence of this spontaneous contraction of the paper currency? The paralysis of credit and industry is passing away, and commerce to a marked degree has begun to revive. A very favorable balance of trade has reduced the rates of exchange on England considerably below par, and gold has constantly flowed into the country to an unprecedented extent. According to the estimates of the Director of the Mint, the amount of coin and bullion in the United States on June 30, 1876, was over one hundred and eighty-one millions, of which about thirty millions were silver. As the imports of gold during the autumn of 1876 were immense, owing to the favorable balance of trade, and as the mines of both the precious metals during the same period were very productive,¹ there can be no doubt that the quantity of the precious metals in the country on January 1, 1877, was at least two hundred and twenty millions. In the opinion of the undersigned, that sum is a sufficient basis on which specie payments could be maintained without difficulty or disturbance, even if resumption should take place at a very early day. For the effect of such resumption would be to rescue this specie from its present semi-latent state, employed only in foreign trade and in certain limited

¹ According to Dr. Linderman, "the domestic production of gold and silver during the fiscal year (ending June 30, 1876) was about eighty-five and one fourth millions dollars; of which amount, forty-six and three fourths millions were gold, and thirty-eight and one half millions silver."

transactions with the United States Treasury, and bring it once more into full use *as money* — as a constituent part of the active circulation of the country. So brought back, it would even more than fill the gap caused by the partial withdrawal of paper currency, and in this way, combined with its effect in still further restoring confidence, and putting more heart into trade and manufactures, the probable immediate effect of resumption would be to raise the prices of commodities generally, instead of depressing them, and thus actually to favor the indebted states, and generally, the indebted classes of the people.¹

Turn the matter as we may, the chief cause of the evils under which, for three years, the country has suffered, has been impaired credit and the want of trust in the future. It has been the absence of any fixed standard of value, and the uncertainty in the markets caused by the fear lest Congress should again inflate the paper currency. Who were the greatest losers by this deplorable state of things? Not the creditor class, surely; not the capitalists; not the owners of unincumbered houses and lands, and government gold-paying stocks, and fully constructed and equipped railroads, which are still paying dividends, though at reduced rates. These have something to fall back upon; their incomes are diminished, it is true, and sometimes cut off altogether; but they can still subsist for a long time, even on their dead capital. But the indebted and industrious classes have no shelter behind which they can retire for a season. They are exposed at once to the whole violence of the storm. For them, the inevitable result of the withdrawal of credit, the consequent embarrassment of trade, and the crippling of every industrial enterprise, is privation of employment, hopeless insolvency, and ultimate ruin. No persons in the community would be so much benefited by the restoration of a fixed standard of value as the industrious and dependent classes. For them, the certainty that the dollar will be worth a month or a year hence precisely what it is worth today means regular employment, a fixed rate of wages, a stable

¹ This anticipation has been fully verified by recent events. The resumption of specie payments, January 1, 1879, instead of depressing the markets, was accompanied and followed by a rapid and very considerable enhancement of prices generally, and by a corresponding revival of trade and manufactures.

market, moderate but certain gains, and the absence of all anxiety for the future.

The South and West, already largely indebted to the Eastern and Middle States, are still in urgent need of further advances of capital from the same source, in order to develop still more their unrivalled opportunities, their boundless stores of latent wealth. The paralysis of business throughout the country is specially detrimental to them, as they have no reserves to fall back upon, no stores of capital already amassed, which they can afford to suffer to remain idle for a time, till the returning tide of confidence and enterprise shall again set the wheels of industry in motion. Nearly all their current gains from improvements already completed are absorbed in paying the interest on the mortgages and bonds which represent the advances previously made to them, being the price of most of the prosperity which they have hitherto enjoyed. Many of the people there are now clamoring for more inflation of the currency, thinking that the increase in the number of paper dollars, and the consequent inevitable depreciation of their value, will both make it easier for them to pay the interest on their debts already contracted, and so far revive speculative enterprise as once more to irrigate their fields with the inflow of capital from the East. But even a child might see that these two contemplated results are incompatible with each other. One who is already deeply in debt cannot pave the way for obtaining the additional loans that he needs by announcing, of his own accord, that he is in a state of spontaneous and chronic bankruptcy; that he will not, at the utmost, pay more than ninety-three cents on the dollar, and that he has taken steps to make sure that even this dividend shall rapidly be diminished, only leaving it uncertain whether it shall early or late be reduced to nothing, and the debt consequently be repudiated altogether. Capitalists must be singularly constituted who will grant fresh loans to debtors openly announcing such conditions.

There is a grave question, indeed, whether the national honor is not even now tarnished by the mere fact that specie payments have not been already resumed. By the act of March, 1869, entitled "An act to strengthen the public credit," the faith of the United States was "solemnly pledged" "to make provi-

sion, *at the earliest practical period*, for the redemption of the United States notes in coin." The amount of legal-tender notes outstanding on November 1, 1876, was \$367,535,716. But it appears from the following table, for which I am indebted to the kindness of the Secretary of the Treasury, that, after discharging all the obligations of the United States already due which are payable only in gold, the government sold at public auction, between July 1, 1869, and September 30, 1876, surplus gold to the amount of \$389,705,144.68, on which it received a premium of \$58,020,155.53. In view of the fact that the surplus gold thus disposed of exceeded by over twenty-two millions what was necessary to redeem all the legal-tender notes outstanding, how can it be said that Congress has kept its solemnly-pledged word that it would redeem those notes "at the earliest practicable period?" The paper money received from that sale of gold was not needed in order to provide for the other necessary expenditures of the government; for it appears that, during the period in question, after defraying all the ordinary expenses, the Treasury paid off public debt not yet due to an amount exceeding four hundred and thirty-five millions of dollars.

Amount of surplus gold sold by the United States Treasury from July 1, 1866, to October 1, 1876, with the premiums received thereon.

Period.	Amount sold.	Premium received.	Average rate per cent. of premium.
From July 1, 1866, to June 30, 1867.....	\$38,337,928.78	\$14,154,843.55	37
From July 1, 1867, to June 30, 1868.....	54,209,653.79	21,934,986.54	41
From July 1, 1868, to June 30, 1869.....	32,013,258.45	12,376,289.38	39
From July 1, 1869, to June 30, 1870.....	65,081,516.50	15,294,137.37	24
From July 1, 1870, to June 30, 1871.....	72,423,042.03	8,892,839.95	11
From July 1, 1871, to June 30, 1872.....	77,597,495.70	9,412,637.65	12
From July 1, 1872, to June 30, 1873.....	76,993,246.54	11,560,530.89	15
From July 1, 1873, to June 30, 1874.....	38,013,974.80	5,037,665.22	13
From July 1, 1874, to June 30, 1875.....	33,401,526.42	3,979,279.69	12
From July 1, 1875, to June 30, 1876.....	25,092,251.44	3,723,545.80	15
From July 1, 1876, to September 30, 1876..	1,102,111.25	119,518.96	11
Totals ¹	514,265,985.70	106,486,275.00	21

¹ Also, in May and August, 1876, there was a further sale of gold received under the Geneva award, amounting to \$8,374,714.78, on which a premium was obtained of \$1,014,222.85, or nearly 12 per cent.

Summing up, the following are presented as the conclusions of this Report :—

1. The great changes which have taken place during the last year in the relative value of the two precious metals are attributable almost entirely to fluctuations in the market price of silver, since the prices of commodities generally, reckoned in gold, have been comparatively stable.

2. These fluctuations indicate a considerable fall in the value of silver, which has been produced by three causes : 1. By the great productiveness of the silver mines in the Comstock lode, which, within a few years, have doubled the average annual product of that metal for the whole world ; 2. By a great diminution, within the last five years, of the demand for silver to be exported to British India ; 3. By the demonetization of silver, within the same period, by Germany, Denmark, Sweden, and Norway, and by the limit put upon the coinage of it by Holland, France, and the other states of the Latin Monetary Union.

3. These fluctuations prove that silver has become entirely unfit for use as a standard of value ; and this action of Germany and other European states shows that they have become aware of this unfitness, and have altered their systems of coinage and legal tender accordingly.

4. The question whether the three causes here alluded to have *permanently* depreciated the value of silver is one which does not, at present, admit of a determinate answer. Vague estimates and uncertain theories afford no safe grounds for legislation.

5. The so-called double standard is an illusion and an impossibility. The prolonged attempts made both by France and the United States to establish such a standard have been complete failures, causing much confusion and inconvenience, necessitating frequent changes of legislation, and resulting only in the alternate establishment of one or the other precious metal as the sole standard.

6. Silver is further unfitted to be the principal medium of exchange, first, through its considerable weight and bulk in proportion to its value, being thus inconvenient for use in large transactions and settling international balances ; and, secondly, through its constant liability to loss by abrasion and clipping,

the corresponding loss in the case of gold being so small as to be almost imperceptible.

7. The proper place for silver in a monetary system is that of a subsidiary or token currency, which is considerably overvalued by law, and made legal tender only within certain limits. These limits being indeterminate except by general considerations of expediency, there is no valid objection to so far widening them as considerably to increase the amount of silver now in circulation, paper money being withdrawn to an equivalent amount, and the silver coins being made legal tender for any sum not exceeding twenty dollars.

8. The proposed "policy of continuing legal-tender notes concurrently with the metallic standards" would be in the highest degree inexpedient and unjust, this paper-money system having been the chief cause of the paralysis of trade and industry under which the country has labored for the last three years, and Congress having, as far back as 1869, solemnly pledged the faith of the country for the resumption of specie payments at the earliest practicable moment.

9. Circumstances at the present time have made such resumption both practicable and easy within a very brief period, the paper currency having spontaneously contracted itself at the average rate of three millions a month during the last twenty-two months.

In order to complete this very desirable result, and to make our monetary system conform in all important respects to that of the most prosperous and best ordered commercial countries of Europe, the following measures are respectfully recommended for adoption by Congress:—

1. That dollars be coined each containing 345.6 grains of pure silver, which shall be legal tender for any sum not exceeding twenty dollars, and shall be issued only in exchange for paper currency below the denomination of five dollars; and the one-dollar and two-dollar notes so received in exchange shall be immediately cancelled and destroyed. These silver dollars, however, shall be receivable to any amount in payment of any dues to the government, except for duties on imports. After January 1, 1878, notes below the denomination of five dollars shall not be paid out either by the Treasury or the banks, and shall not be legal tender.

2. Gold shall in future be coined only at the rate of 22.6 grains of pure gold to the dollar, so that the half eagle, or five-dollar piece, may be almost the exact equivalent of one pound sterling ; and the gold so coined shall be legal tender to any amount : *Provided, however,* That all debts and contracts expressly made payable only in gold, and outstanding on the date of this enactment, shall be paid and discharged only by dollars each containing 23.22 grains of pure gold, or by their equivalent.

3. Out of the paper currency received by the government in the collection of its internal revenue, a sum not exceeding three millions of dollars each month shall not be reissued, but shall be cancelled and destroyed ; and any deficit which may thereby be created in the Treasury shall be supplied in the manner already authorized by law, namely, by the sale of any of the United States bonds which the Secretary of the Treasury is now empowered to issue.

All of which is respectfully submitted by

FRANCIS BOWEN.

I concur in the foregoing report of Mr. Bowen.

R. L. GIBSON.

THE PERPETUITY OF NATIONAL DEBT.

A SUPPRESSED CHAPTER OF POLITICAL ECONOMY; READ BEFORE THE AMERICAN ACADEMY OF ARTS AND SCIENCES IN MARCH, 1868.

NATIONAL debts, though they are now wellnigh universal, are comparatively modern inventions. They were invented at about the same time in France, England, and Holland, towards the close of the seventeenth century. Before that period, indeed, costly wars had been waged, and governments had not only contracted heavy debts, but often failed to pay them. Sometimes they got rid of them by the dishonest expedient formerly called "raising the standard," though we designate it by the more appropriate phrase of "depreciating the currency." Kings and governments frequently became insolvent; but their obligations, like those of private persons, were always regarded as strictly personal, and as finally dissolved by the death of the bankrupt leaving no available assets. The contrivance of funding a National Debt on the perpetual annuity plan, so as to throw the burden of supporting and paying it upon posterity, — in other words, of making debts transmissible by inheritance, like a house or farm, — was never heard of on English ground before the Revolution of 1688. It was first hit upon during those costly and disastrous wars which were brought upon Europe by the ambition of Louis XIV.

Every country of any importance on the continent of Europe has now a large National Debt, contracted in the main, like that of England, to meet the extraordinary expenses of war. In proportion to their wealth and ability to pay the annual interest, at least four of these countries, Austria, France, Italy, and Holland, are more deeply in debt than England. Nearly all of these debts, like the English, are redeemable *at par* at the option of the government; that is, they are funded on the

perpetual annuity plan, since no definite time is fixed for such redemption. In one sense, therefore, the debt is merely nominal, since no person has a right to demand of the government, at any time, the payment of any portion of the principal. The annual interest is all that the stockholder is entitled to; and this right is inviolable. The state did not borrow his money under any obligation to repay it at a fixed day, but only sold him an annuity, which is a perpetual annuity, unless the government should see fit, at some future time, to exercise the privilege, which it has reserved to itself, of redeeming any portion of it by paying off *at par* the stock of which it is really the interest. The operation of *funding* properly consists in putting a National Debt into this form of a perpetual annuity, redeemable, *at the option of the debtor*, at a certain amount which is fixed upon, and is called *the par*. Of course, this amounts to a perpetual mortgage upon the earnings of future generations in order to pay the debts of those who are now living.

This "par" is not necessarily the sum which the government received at the time of contracting the debt, but is generally much larger, the excess often being fifty or sixty per cent. For instance: the government sells an annuity of \$500 a year. If it chooses to create a five per cent. stock for this purpose, it designates \$10,000 as the par, since this sum, at five per cent. will yield a revenue forever of \$500 a year. If it prefers a four per cent. stock, it designates \$12,500 as the par, as this sum also, at four per cent., will produce a perpetual annuity of \$500. In either case, it sells the \$10,000 of five per cent. stock, or the \$12,500 of four per cents, or the perpetual annuity of \$500, — it matters not what name we give it, since in fact they all amount to the same thing, — for whatever may be at the time its market value, — very likely, for not more than \$7,000 or \$8,000. But if, at some future day, the government should see fit to pay off the debt, it will be obliged to pay either \$10,000 or \$12,500, according as it has called the stock five per cents or four per cents. Hence it is, that the government usually pays interest on a much larger sum than it has actually received. Thus, the English debt, of about 800 millions sterling at three per cent., represents only

about 464 millions actually received by the Treasury, so that the government is in truth paying over five and one half per cent. interest.

The first meaning of the phrase "funding a debt" was different, and deserves explanation, as it shows how the perpetual annuity plan originated. Over a century ago, it was a common practice in France and other countries, when the government was in want of money for war purposes, to "farm the public revenues," as it was called; that is, in return for a large sum of money received in advance, to make over to the public creditor, *for a given period of years*, the right of collecting some tax or duty for his own benefit. For instance: suppose the salt-tax, or the duty on sugar, to yield five millions annually. The government might then, on condition of receiving \$38,600,000 paid immediately, *farm* or let out to the persons advancing this sum the right to collect, for their own benefit, the salt-tax or sugar-duty *for ten years*; since an annuity for ten years of five millions, at five per cent. compound interest, is worth about thirty-eight and one half millions. Of course, the "Farmers General," as these persons were called, became very unpopular, as they had their own officers and excisemen, who collected the taxes for them with great rigor; and the odium of the burdensome taxes was thrown upon these agents, many of whom were guillotined during the French Revolution of 1789. The transaction was really a sale or mortgage, *for a limited period*, of certain revenues of the state, rather than a loan. It was perfectly legitimate; since the state has an undoubted right, as one mode of raising extraordinary supplies, to impose additional taxes, and then to anticipate their proceeds by selling or mortgaging the right to receive them, *for a given number of years*, as a means of repaying both principal and interest of the sums advanced on their security. The revenues thus pledged, or actually made over, were called *the funds* on which payment of these short annuities was secured. This was the original meaning of the phrase "funding a debt," which we have retained, though the practice itself has become obsolete, as it is not the fashion nowadays to guaranty the payment of the public debt in any other way than by an implied and indefinite pledge of the public faith.

This custom of farming the public revenues obviously led the way to the practice of selling annuities for short, fixed periods, say for ten or twenty years. Then life-annuities were sold. Afterwards, Tontines were established, which are life-annuities paid to a small company of persons in the manner of a lottery, with benefit of survivorship, the share of each holder after his death being distributed among his associates, so that the last survivor receives the aggregate amount originally paid each year to the whole company, and only at his death is the total annuity extinguished. Then, long annuities, for ninety-nine years or more, were granted, — a step which soon led to the present plan of making the yearly payments perpetual.

In striking contrast with the history of the growth of public debt in England and France, we have the financial prosperity at this period, and even to a much later day, of the little kingdom of Prussia. Aided by a considerable treasure which the avarice of his father and his own administrative talent had accumulated, the genius of Frederick the Great met all the exigencies, the mingled triumphs and disasters, of the war of the Austrian Succession and the Seven Years' War, without contracting a dollar of debt. "The burdens of the war had been terrible, almost insupportable; but no arrear was left to embarrass the finances in time of peace."

The question has been asked, and with increasing earnestness of late years, — Why have any National Debt? Why not pay as we go, in war as well as in peace? Certainly not from the lack of ability. We might have done so, had we seen fit, even in the unparalleled war of the Great Rebellion, the most sanguinary and the most expensive of all that are recorded in modern history. It was not thought proper, however, that the surplus earnings of the whole people for four or five years should be thus contributed to war purposes. It was deemed best that most of them should continue in the present enjoyment of the fruits of their industry, on condition of reimbursing, with interest, out of their *future* earnings, — in the way of stock *payable in three, five, ten, or twenty years*, — those owners of capital (our own fellow-citizens, be it remembered) from whom the government borrowed enough to carry on and finish the conflict.

The doctrine that a comparatively small immediate sacrifice, through the payment of heavy taxes during a war, might prevent the accumulation of a mountain of debt at its close, has been demonstrated by the experience of the British government during that long war with France, which, on the borrowing and funding system, actually added six hundred millions sterling to the National Debt. The struggle really lasted but twenty-one years ; but allowing one year of preparation for it, and two more years for the necessary delay in coming back to a peace system, the whole war period may be said to have been twenty-four years. Putting aside the payment of interest on debt contracted during the war, it appears that the total expenditure of the country exceeded the revenue obtained from taxation only during the first twelve, and the last four, years of actual conflict. During the other eight years, the income would have exceeded the expenditure, but for the interest on the sums borrowed during these sixteen years. Deducting the total of the credit excess during the one period from the total of the debit excess during the other, the remainder is only about one hundred and fifty-one millions sterling. In other words, the total expenditure of the country from 1793 to 1816, both inclusive, for internal government, colonies, the war, and debt contracted previously to 1793, was only one hundred and fifty-one millions greater than the revenue actually derived from taxes during these years. Deducting this sum from six hundred millions, — the debt actually incurred, — we have four hundred and forty-nine millions as the debt needlessly incurred from the accumulations of interest, from a vicious funding system, and from not imposing the heavy war taxes soon enough.

The next question is, Ought measures to be instituted for paying off the debt, principal and interest, as soon as practicable, or should it be allowed to continue for an indefinite period ? The English government have adopted the latter policy, having reduced their debt but little for half a century. It is neither a want of means, nor what has been called “an ignorant impatience of taxation,” which has caused this delay. The annual sum received from taxes is no larger now than it was during the four years ending in 1816, though the population meanwhile has nearly doubled, and the national wealth is

increased at least fourfold. That the people would bear, without material discontent, a considerable increase of their present burdens, was proved by recent experience in the Crimean War. The debt is allowed to continue, from the belief that it gives firmness and stability to the government; nearly the whole property of the country, as more or less intimately connected with the debt, being deeply interested in its support. It is also a powerful dissuasive from any future war; it may be said to have placed England under very heavy bonds to keep the peace. This consideration has gained ground of late years, being the foundation of the ultra peace-policy adopted by that large portion of the commercial and manufacturing middle classes, who followed the lead of Mr. Cobden and Mr. Bright. It must be confessed that there are two sides to their favorite argument. A large National Debt may restrain the country from going to war, even when the national honor and security seem to advocate vigorous measures.

I propose now to offer some considerations in favor of contracting and paying a National Debt only in the form of *short annuities*, not exceeding twenty-five years in duration, so that the whole may always be paid off within the lifetime of the generation that contracted it. This plan, I shall endeavor to show, offers the following advantages:—

1. It avoids altogether the very serious objections which may be made to the alleged right of any society or body politic to bequeath its own voluntarily incurred debts to the generations which are to come after it, or to impose any pecuniary obligation upon those who are not yet in existence, and are therefore incapable of assuming the burden by their own consent.

2. It materially lessens the risk of future repudiation or bankruptcy, and thus strengthens the public credit, thereby continually increasing the facility of borrowing at lower rates of interest.

3. It has all the advantages of a sinking fund, the debt being thus subjected to a constant and uniform process of liquidation, while it entirely avoids the risk to which a sinking fund, properly so called, is always liable, of being diverted, under any considerable emergency, from its original purpose, and applied to the state's present wants.

4. The saving in the rates of interest effected through all these advantages will be so considerable, that the yearly payment on the short annuity probably will not exceed, and may even be considerably less than, the corresponding payment on a perpetual annuity, so that the debt will be entirely discharged in twenty-five years with no greater effort than would otherwise be necessary merely to pay the annual interest on it forever.

5. It will materially simplify the fiscal transactions of the government, principal and interest being fused together into one sum ; while the annual payments on each separate annuity, whether of large or small amount, being made divisible in the manner of coupons, each being separately negotiable at a longer or shorter time before it becomes due, the market will be constantly supplied with every form of stock convenient for investment, according to the various wishes and necessities of different capitalists.

Terminable annuities for long periods, as for one hundred years, are usually found not to be desirable forms of investment ; and the experience of the British government proves that there is no considerable demand for them. Otherwise, funding in such annuities would be a very eligible mode of liquidating public debt by a process so gradual as hardly to be perceived ; though, from the length of the term employed, it would still be open to the serious objection of entailing upon future generations a burden which does not rightfully belong to them. An annuity of \$1,000 for one hundred years, supposing money to be earning four per cent., is worth \$24,500, while a perpetual annuity of the same amount is worth but \$25,000 ; in other words, to increase the annual payment less than one twelfth of one per cent. would be, in this mode of funding, to cancel the whole debt in one hundred years, instead of allowing it to continue forever. But corporations and individuals looking out for permanent investments do not willingly purchase into a constantly diminishing fund. "Even the subscribers to a new loan, who generally mean to sell their subscription as soon as possible, invariably prefer a perpetual annuity," redeemable only at par, at the option of the debtor, "to an irredeemable annuity for a long term of years, of about

equal amount. The value of the former being always the same, or very nearly the same, it makes a more convenient transferable stock than the latter."

It might seem that the same objection would apply, and even with increased force, to the plan of funding in annuities of only twenty-five years' duration. And so it would, if, by this means, the term of full repayment were not brought within the ordinary limit of the lender's own life, so that he might himself reasonably expect to see both the beginning and the end of the transaction; and if, also, the recent invention of coupons did not permit the distinct annual payments on any one annuity to be severed from each other, and then separately bought and sold. In this way, almost every conceivable form of investment, not exceeding a quarter of a century in duration, might be offered in the stock market, to suit the different fancies of purchasers.

Any one, for instance, might purchase a single instalment of an annuity of large amount, say \$50,000, to be paid after the lapse of twenty-five years; and also a complete annuity of small amount, yielding him a yearly income of \$2,500 for the same period. The price of the former, considering money to be worth five per cent., would be about \$14,756; that of the latter, reckoning in the same manner, about \$35,244. The aggregate of these two sums is \$50,000, showing, of course, that the result for the purchaser is precisely the same as if he had invested this last sum in perpetual annuities at the same rate of interest.

Accordingly, this method combines every possible advantage of both systems. The lender who wishes to invest on the old plan, of annual payment of the interest only, with final reimbursement of the principal in one sum, can do so, with the benefit superadded of the constant operation of a sinking fund, one twenty-fifth part of the whole debt being necessarily liquidated every year; he has also the option, if he prefers the other system, of waiving the annual payments of interest, and of allowing his investment steadily to accumulate at compound interest, without the delay, inconvenience, and hazard of making annually fresh investments; or, thirdly, should exceptional circumstances render such a course desirable, he may sink the

whole sum in a terminable annuity for any period not exceeding twenty-five years.

Far the most valuable, and, as I believe, the popular, feature of the plan, would be the opportunity which it would afford of making investments to any extent, and for any time less than twenty-five years, in the form of steady accumulation at compound interest. I know not whether the economical or the moral advantages of this mode of funding would be the greater. Nothing could more effectually stimulate the habit of frugality, the effective desire of accumulation, and the consequent rapid growth of capital, than to keep the market fully supplied with securities of undoubted permanence and value, the holders of which, waiving the receipt of annual interest, would find the fruits of their industry and economy steadily increasing in geometrical ratio, without trouble or watchfulness on their part, in full proportion to the time, and for such time only, as that during which they originally proposed to keep them, yet capable of use as a pledge for obtaining loans, or of immediate negotiation and sale, should a change of circumstances or plan make such realization desirable. Individuals and corporations having frequently considerable sums to invest for a few years, with a view only to safety and constant accumulation during this period, and desirous of allowing as little of their capital to remain unemployed as possible, but at the same time not to place it entirely out of reach even for a day, would find in the opportunity of purchasing into such stock the perfect fulfilment of their wishes. Moreover, as the peculiar advantages of investments at compound interest can be reaped to the full extent only by those who retain them unchanged for a considerable length of time, such securities would, in proportion to their amount, be less frequently offered for sale or bought for short periods, and therefore would afford less stimulus and nutriment to the blind passion for speculation and reckless adventure, which has too closely assimilated our stock markets to the great gambling-hells which are often appropriately placed close beside them. We have had, during our recent civil war, exemplification of this truth in the fact, that Treasury notes at compound interest, though issued to the amount of nearly two hundred and twenty millions, and expressly made legal ten-

ders, like ordinary money, soon disappeared almost entirely from circulation, and were held as the most permanent portion of their reserves by banks and large capitalists.

In truth, the creation of this form of stock would answer nearly all the purposes, and afford even more than the ordinary advantages, of Savings' Banks, Life Insurance offices, and other Trust companies, besides offering the most eligible investments for the reserve funds of these institutions. The rapid growth of these establishments, and the prodigious extent of the field already covered by their operations, indicate the commonness of the desire, among the industrious and the frugal in our community, to invest their savings for accumulation at compound interest. To satisfy this desire is the peculiar work which such institutions have to do; but their ordinary expenses are considerable, their operations are impeded by rivalry with each other, investments once made in them for a fixed period cannot be withdrawn without loss, and the security which they afford is not always unquestionable. In each of these respects, investment in them would be less desirable than in United States stock accumulating in the same manner, and with the certainty of an equal, or even higher, rate of interest. In transactions which may continue for a quarter or half of a century, no prudent company can bind itself to pay a higher rate than four per cent. ; the government would pay four and a half or five per cent. What is called an "Endowment policy," the covenant being to repay the advances at a fixed period, though the life may not have terminated, has become a favorite form of insurance, the main purpose evidently being to invest savings at compound interest for some years, and only a secondary one to make provision for others in view of the uncertainty of life. An easier, more profitable, and perhaps a safer, mode of accomplishing this chief object, would be to purchase, at its present value, some future instalment of a government annuity.

But the expediency of the proposed system, as it seems to me, does not depend on the mere question of immediate pecuniary loss or gain, but on far graver considerations regarding the preservation of the public faith, and the evils resulting from the perpetuity of a great National Debt. On the whole,

there are the same motives for a government, as for an individual, to endeavor to get rid of debt. In itself considered, debt is both a discredit and an incumbrance. It detracts from the weight and influence of the nation in its relations with foreign powers, and nourishes discontent at home, through the long-continued pressure of taxation. The trouble and cost of its management embarrass the administration, and tend even to corrupt and degrade it, through the large increase of its financial concerns. If heavily in debt, a country is able to meet the exigencies of war only with its right arm in a sling. One reason why the American people passed comparatively unharmed through the fiery trial to which they were recently subjected was, that they were not burdened with an oppressive debt at the outset. With the great load which they are now carrying, the recurrence of a calamity similar in kind, though not equal in extent, would lead inevitably to a breach of national faith and a long train of financial disasters.

The payment of the interest alone, at six per cent., in little over sixteen years, requires the receipt and disbursement of as large a sum as the principal. Especially in a republican government, where the virtues of simplicity, purity, and frugality are of high account, being indissolubly linked with the preservation of the state, it is of the utmost importance to restrict the sphere of the national finances, and to avert even the suspicion of corruption and fraud. The period of the South Sea Bubble in England, and of Law's Mississippi scheme in France, about 1715, was one not merely of pecuniary ruin, but of degradation and shame, both in the councils of the state and in private life; of almost universal forfeiture of reputation and self-respect, and a permanent deterioration of the national character. The origin and the characteristic feature of both these calamitous series of events was gambling in the public stocks, incited by the then recent institution of a permanent National Debt. The gigantic scale on which our national finances have been conducted for the last twenty years appears to have exerted an equally disastrous influence on the tone of domestic politics, the morals of commerce, and the reputations of those who have gathered enormous wealth out of the perils and losses of the state. It would be sad to believe that the

burden which brings with it such consequences is fastened upon us forever.

The reason commonly alleged to justify a nation in contracting a great debt, and postponing indefinitely the time of its payment, is, that future generations, as they reap the benefits and share the security which have been obtained by the conflict, may also bear their share of its burdens and cost. We have triumphed, not only for ourselves, but for posterity; then let posterity help to pay the bill. But this argument, frequently repeated as it is, is a misconception and a blunder. What possible difference does it make to my heirs, whether I leave them an estate worth \$50,000 burdened with a debt of \$10,000, or an unincumbered property worth \$40,000? In either case, whether the debt is paid off or not, posterity must bear their full share of it, either by receiving their whole inheritance thus incumbered, or by receiving a free estate which has been cut down in size in order to pay off the incumbrance. In fact, the property has been actually expended and destroyed in carrying on the war; the powder has been fired off, the shells bursted, the fortifications destroyed, the ships and houses burned, the men killed. As the *population* of the country can never be so large as it would have been, had not these lives been sacrificed; so its *wealth* can never be so great as it would have been, had not this amount of property been destroyed.

Besides, we are not sure what view future generations will take of the expediency and justifiableness of the war. If the opinion of Englishmen of the present day could be taken, I doubt whether a vast majority of them would not declare, that the whole war against the French Revolution and the first Napoleon, extending from 1793 to 1815, was a blunder and a crime. Of what use was it to defeat Napoleon the Great, and banish him to St. Helena, at the cost of a million or two of lives and six hundred millions sterling of debt, when they coolly allowed Napoleon the Little, with a much inferior title and character, to take his uncle's place on the throne, and even entered into an *entente cordiale* with him to insure his possession of it? Take another example. Probable every sane man in England, acquainted with the facts, would now frankly con-

fess, that the war of the American Revolution, on the part of *his* ancestors, was unjustifiable and inexpedient from beginning to end. Yet this war added one hundred and twenty millions sterling to the English National Debt; and as the joint result of these two wars, all the laboring men in Great Britain (four fifths of the whole population, be it remembered), *who inherited nothing from their ancestors but the right to work and to be taxed*, are now held to pay more than twice its natural price for every mug of beer, and every cup of tea or coffee, which they drink; till recently, and through a long series of years, they were heavily taxed on every loaf of bread which they ate. I do wrong to say that they inherited nothing. They inherited a country so enfeebled and disheartened by the National Debt entailed upon it by these two insensate and unrighteous conflicts, that it does not venture now to go to war, even in a just cause, with any power on the European continent.

We may not fear the judgment of posterity about the recent war of the Rebellion; for the abolition of slavery alone, which it has brought about, is a great good and a possession forever, not for this country only, but for the civilized world. And yet, if the question should be asked, *fifty or sixty years hence*, why, without going to war and destroying half a million of lives, we did not peacefully purchase the liberty of every slave on the continent, and furnish him also with a lot of ground large enough to support himself and family, — a measure for which the four thousand millions spent by the North alone on the war would have been more than sufficient, — if this question, I say, should be then asked, perhaps it is well that posterity, and not the men of this generation, will have to answer it. Turn the matter as we may, war is both a great evil and a great sin. “From whence,” asks the Apostle, — “from whence come wars and fighting among you? Come they not hence, even of your lusts that war in your members?” But for the feelings of bitter hostility between North and South, nursed by the arts of ambitious and reckless politicians, slavery might have been *bought out*, instead of being *fought out*, of existence, without bringing death into almost every family in the land, and shaking the civilized world as with an earthquake. Distribute

the guilt as we may between the two parties to the conflict, — of course, the victors believe the South were ten times as guilty as they were, — still there was guilt and shame on both sides in bringing about hostilities. With this view of the case, — a view not improbable to be taken half a century hence, though it may be unpalatable now, — we can imagine posterity turning a deaf ear to our entreaties that they should help us in paying the bill for the fight.

But there is a graver argument against allowing an indefinite, or even a long, continuance of the pecuniary obligations contracted during a war. A funded National Debt is a mortgage upon *the labor* of posterity; for it is out of the fruits of the national labor alone that the annual interest, or any portion of the principal, can be paid. But to mortgage the right of our descendants to enjoy the fruits of their own industry is a violation, not only of all natural, but of all municipal law. No code on earth authorizes me to bind my son or grandson to pay my debts, except to the extent to which I leave him property wherewith to make such payment. Granted, if you will (though grave reasons will soon be offered for refusing even this concession), that a portion — comparatively a small portion — will inherit from us houses and lands and personal property; and that *they* may rightly be held to pay, *to the extent of the wealth thus inherited*. Still you have no right to mortgage the labor of those — vastly more than a majority of the whole number — who inherit nothing but a stout pair of arms and a cunning brain. On what grounds can we bind these men of the future to pay our debts, seeing that they were not born when those debts were contracted, and have inherited nothing from those by whose prodigality, vindictiveness, sloth, and sin these debts have been accumulated? And what will your mortgage on the future amount to, if these men and their descendants, and all the wealth which they and theirs have since amassed by their own honest industry, are exempted from it? Family property in this country does not last long; wealth is here found chiefly in the hands of those who have earned it — have, in fact, created it — by their own exertions. Pass a period of forty or fifty years only, and far the greater part of the property in the country will be found

to be owned by those on whom there rests not the shadow of an obligation to pay our debts.

This doctrine is so far from being novel, that, till within two hundred years, it was admitted by all nations, and was incorporated into all their codes of law. Debts were universally regarded as strictly personal, or incapable of transmission by inheritance. A promise to pay could bind nobody but him who voluntarily made the promise, and had received and consumed the equivalent for which he made it. Towards the close of the seventeenth century, it suited the policy, or rather the war-passion, of the governing classes in France and England to invent the theory and practice of a *perpetual* debt.¹ And there was a certain consistency in such conduct on their part; since they held that their government, as then constituted, existed by divine right, so that political authority and obligation were transmissible by descent to future generations. But the first principle of our republican institutions is, that there is no such political inheritance, but that each generation has an inalienable right to alter its whole frame of government, so as to adapt it to their present wants and desires. We cannot bind posterity, then, either by our political acts, or by the pecuniary obligations that are based upon such political action, any more than the superstructure can be preserved after the foundations have been dug away. And we cannot incumber what we have no power to alienate; a tenant for life only cannot mortgage the estate except during the period of his tenancy. The whole earth, with everything upon it, descends by necessary and perpetual entail to the generations which are to come after us; and no act of ours can impair the entirety of their ownership, restrict the scope of their industry,

¹ Speaking of William Pitt, Professor Goldwin Smith observes: "He ought to have felt more strongly the injustice of laying burdens on other generations without their own consent. In barbarous ages, when people went to war, they fought for themselves. Civilization taught them to hire, impress, or kidnap other people to fight for them. Still there was a check on war while those who made it had to pay. Taxation of the present was confined within narrow limits; it provoked unpleasant outcries, sometimes it provoked resistance. So the expedient was hit upon of taxing the mute and unresisting future. The system was perfected by degrees. At first, the government only anticipated payments which they might, with some color of reason, call their own. Then they mortgaged particular sources of revenue. Funding with us dates from William III."

or deprive them of any portion of its fruits. Since we cannot disinherit them, neither can we burden their inheritance. The opposite doctrine would have this absurd consequence, that it would enable us to enslave posterity altogether; for if an inherited obligation can take away a part, it can alienate the whole, both of their political freedom and the fruits of their personal industry. The theory of a perpetual debt affixes no limitation to its amount; if the burden can be transmitted at all, it can be made heavy enough to deprive future labor of the whole of its reward.

This is not only the true republican doctrine; we have a right to call it also the established American policy. The United States, hitherto, have always paid off their war debt within the lifetime of those who fought. The Revolutionary Debt was, in fact, fully discharged at least as early as 1817; for the National Debt still existing in that year ought to be considered as resulting from the purchase of Louisiana in 1803, and from the war of 1812. This last debt was still more rapidly extinguished, for no portion of it remained unpaid in 1835. The country was then entirely free from debt, and found itself even incumbered with a surplus income. Thus far, also, we have been paying off the enormous debt contracted during the Great Rebellion at a rate which, if continued, would insure its extinction in less than one generation. In July, 1866, it exceeded 2,783 millions; in February, 1870, it was less than 2,445 millions, thus showing an average annual diminution of about ninety-six millions. During the next ten years, the annual reduction was only about half as great, since the amount of the debt, in February, 1880, was about 2,000 millions. Still, with the aid of the Sinking Fund, which is now established by law, the whole remainder will be extinguished in about thirty years from this time. It must be remembered, also, that no portion of this debt contracted during our great civil war was ever funded on the perpetual-annuity plan. All the loans were originally contracted either for short fixed periods, such as three or five years, or were the so-called "Five-Twenties," or "Ten-Forties"; that is, the periods of the loan were not less than five, or more than twenty years; or not less than ten, or more than forty years. It is evident, then,

that the established American plan of finance, unlike the European perpetual-annuity plan, requires the whole of a war debt to be paid off during the lifetime of the generation which contracted it.

The argument in favor of the American plan is forcibly stated by Mr. Jefferson, in a letter written about four years after the close of his presidency. "It is a wise rule," he says, "and should be fundamental in a government disposed to cherish its credit, and at the same time to restrain the use of it within the limits of its faculties, never to borrow a dollar without laying a tax in the same instant for paying the interest annually, and the principal within a given term; and to consider that tax as pledged to the creditors on the public faith. On such a pledge as this, sacredly observed, a government may always command, on a reasonable interest, all the lendable money of its citizens. But the term of redemption must be moderate, and at any rate within the limit of its rightful powers. But what is that limit? What is to hinder them from creating a perpetual debt? I answer, *the laws of nature*. The earth belongs to the living, not to the dead. The will and power of man expire with his life by nature's law. The generations of men may be considered as bodies or corporations. Each generation has the usufruct [the life use and enjoyment] of the earth during the period of its continuance. When it ceases to exist, that usufruct passes on to the next generation free and unincumbered; and so on, from one generation to another, forever. We may consider each generation as a distinct nation, with a right by the will of a majority to bind themselves, but none to bind the succeeding generations, any more than to bind the inhabitants of another country. Or the case may be likened to the ordinary one of a tenant for life, who may hypothecate the land for his debts during the continuance of his usufruct; but at his death, the reversioner, who also is for life only, receives it exonerated from all burdens."

As, then, the mere surface of the earth, which alone, among all human possessions, is permanent and not subject to decay, necessarily descends free and unincumbered to subsequent generations, so, for a still stronger reason, all movable articles

of value, which, in addition to the land, constitute the whole wealth of the community, and which are not permanent, but decay or are consumed within the lifetime of those by whose labor they were created, belong exclusively to the living. The dead have no control over them, and no right of ownership in them, because they contributed nothing to the industry by which these things received their valuable qualities, or became articles of wealth. It is now universally admitted as one of the first principles of Political Economy, that wealth must be perpetually renewed, or it is quickly used up and disappears. The stock of national wealth may be compared to the flesh, blood, and bones of a man's body, which are in a state of constant flux and renovation, being entirely renewed, the physiologists say, about once in seven years. The harvest of one year is mainly consumed before that of the next year is reaped; certainly, before three years have passed, hardly a vestige of it remains. All our domestic animals are shorter lived than their owners. Even the tools and implements of husbandry are worn out and abandoned in much less time than a generation. The fashion and the fabric of all manufactured goods quickly pass away; our clothes wear out, furniture is spoiled or thrust away as obsolete and inconvenient; houses become dilapidated, or are kept in repair at an annual expense which, in thirty years, exceeds their first cost of construction. If men did not labor meanwhile to renovate and build anew, they would soon be reduced to the condition of savages, even if they did not perish altogether.

Look around upon the material wealth of Boston, and ask how much of it was in existence, and in its present form, in the days of General Jackson's presidency. The railroad wealth of this country, now computed to exceed in value 4,000 millions of dollars, has been entirely created by the industry of the people since 1835. On what pretext, then, could it be held that this property would be liable for the debts of men who lived before 1835, especially if the debts were contracted for the prosecution of a war now generally regarded as impolitic and unjust? How much of this wealth will descend unimpaired to the men of the next century? Though railroads and canals are among the most permanent works of man, the

annual cost of their repairs is so great, that, if allowed to accumulate as an annuity at compound interest, before 1910, the aggregate would doubtless exceed their present worth; or, if left unrepaired, long before that time they would become worthless.

“Everything which is produced,” says Mr. John S. Mill, “is consumed; both what is saved and what is said to be spent; and the former quite as rapidly as the latter. All the ordinary forms of language tend to disguise this. When men talk of the ancient wealth of a country, of riches inherited from ancestors, and similar expressions, the idea suggested is, that the riches so transmitted were produced long ago, at the time when they are said to have been first acquired, and that no portion of the capital of the country was produced this year, except as much as may have been this year added to the total amount. The fact is far otherwise. The greater part in value of the wealth now existing in England has been produced by human hands within the last twelve months. A very small proportion indeed of that large aggregate was in existence ten years ago; of the present productive capital of the country scarcely any part, except farm houses and factories, and a few ships and machines; and even these would not, in most cases, have survived so long, if fresh labor had not been employed within that period in putting them into repair. The land subsists, and the land is almost the only thing that subsists. Everything which is produced perishes, and most things very quickly.” If there are a few works of art which endure, such as the pyramids, Westminster Abbey, painting, and statues, they are objects devoted to unproductive use or mere enjoyment; they are not capital designed for the creation of more wealth. Buildings applied to industrial purposes “do not hold out against wear and tear, nor is it good economy to construct them of the solidity necessary for permanency. Capital is kept in existence from age to age, not by preservation, but by perpetual reproduction; every part of it is used and destroyed, generally very soon after it is produced; but those who consume it are employed meanwhile in producing more.”

I say, then, that no generation of men can bequeath debts

to its successors, because it leaves them no property wherewith to pay those debts. For thirty-three years, the supposed lifetime of a generation, it is admitted that public pecuniary obligations continue in full force; after that period, they are dissolved and finally wiped out by a Statute of Limitations enacted by Nature, in accordance with the first principles of justice; because all the wealth of the country, with exceptions too trifling to be noticed, will then be in the hands of men who have created it by their own labor, and who were not parties to the contract in which the debts originated, and did not assent to the war which rendered those debts necessary. No government on earth, which professes, as the American government does, to be merely an expression of the will and authority of the people now living under it, has a shadow of a right to impose political or pecuniary burdens upon, or to pledge the faith of, the government which is to fill its place more than thirty years hence. This is not pleading in favor of the repudiation of debt, than which no greater national sin is conceivable, except that of an unjust or unnecessary war; but it is a plea in favor of paying the debt as promptly as possible. The guilt and the odium of repudiation should be thrown, where they rightfully belong, upon the men of the present day, if they do not pay off to the last penny, within their own lifetime, the debt contracted in that war which they alone undertook, and in which they alone triumphed.

But the question, after all, is a practical one. In whatever manner, or on whatever plea, they may seek relief, there can be no doubt that our countrymen of the next generation will refuse to bear the burden of a great hereditary National Debt. The property of the stock inevitably gravitates to those portions of the country where capital is relatively abundant, and the rates of profit and interest are low. In a few years, four fifths of the bonds will be owned in the northern Atlantic States or in Europe, while more than half the taxes will have to be paid by the States at the South and West which possess the other fifth. Holding more than half of the political power, how long will the latter consent to be heavily taxed, in order to pay the annual charge of a debt originating in a war in which their own immediate ancestors had either little direct

share, or an adverse interest? The present population of Oregon and California, at the worst, had not much to fear from the issue of the conflict, and made comparatively few efforts or sacrifices to bring it to a close. Even the great evil which produced the strife hardly concerned them. At a distance of three thousand miles from slavery in the Southern States, and from serfdom in Russia, they could safely repeat the scornful exclamation of the Scotch Campbells, "It is a far cry to Lochow." Still less will the people of Nevada, Idaho, and the whole cluster of States which will soon surround them, be inclined, a generation hence, to support their portion of the common burden. The wealth which they will then have will surely be of their own creation, for even yet it has hardly begun to exist. By what right, they will ask, can our present industry be impeded and deprived of its just reward, in order to support a debt created a generation ago by a civil war among the people east of the Mississippi? Such questions it will be easy to ask, and we cannot doubt how they will be answered.

As the result of all these considerations, — and there is terrible force in some of them, — it seems of the utmost importance to make provision for paying off the debt within the lifetime of the generation that contracted it. It can be done, either on the plan here proposed, or by some other method, without lessening by one dollar the inheritance of those who are to come after us. As already shown, it will be the same thing to the heirs whether the estate descends to them in its present size, burdened with this debt, or unincumbered, but made smaller, by its payment. I know the idea of repudiation is unpopular now; take the vote to-morrow, and not one in a thousand will vote in favor of it. But we cannot answer for the future, for the men of 1900, especially if a train of such disasters should come upon them as we experienced in the commercial crises in 1837, in 1840, and again in 1857. To be entirely free from debt is the most efficient preparation that can be made for all the exigencies of the future, whether political or pecuniary.

The value absorbed in loans raised at home is so much withdrawn from the capital employed in aiding productive industry

within the country. This is an argument, which is strongly urged by Dr. Chalmers and Mr. J. S. Mill, in favor of raising within the year the whole of the supplies needed for war purposes, instead of obtaining them by an increase of the National Debt. Whatever is spent unproductively, they say, cannot but be drawn from capital or yearly income. "The whole and every part of the wealth existing in the country forms, or helps to form, the yearly income of somebody. The privation which it is supposed must result from taking the amount in the shape of taxes is not avoided by taking it in a loan. The suffering is not averted, but only thrown upon the laboring classes, — the least able, and who least ought, to bear it; while all the inconveniences, physical, moral, and political, produced by maintaining taxes for the perpetual payment of the interest, are incurred in pure loss. Whenever capital is withdrawn from production, or from the fund destined for production, to be lent to the state and expended unproductively, that whole sum is withheld from the laboring classes; the loan, therefore, is in truth paid off the same year by these classes; the whole of the sacrifice necessary for paying it off is actually made; only it is paid to the wrong persons, and therefore does not extinguish the claim; and paid by the very worst of taxes, — a tax exclusively on the laboring class. And after having, in this most painful and unjust of ways, gone through the whole effort necessary for extinguishing the debt, the country remains charged with it, and with the payment of its interest, in perpetuity."

THE FINANCIAL CONDUCT OF THE WAR.

A LECTURE DELIVERED BEFORE THE LOWELL INSTITUTE IN BOSTON, IN
NOVEMBER, 1865.¹

THE war of the Great Rebellion, through which this country has recently passed, was in many respects unparalleled in history. It was waged on a larger scale, with greater armies in the field, over a larger extent of territory, and with a more lavish expenditure of blood and treasure, than any European war of modern times. The means and enginery with which it was carried on were, for the most part, novel or untried in actual warfare. Our ships and artillery, indeed, were to a considerable extent invented by ourselves while the war was in progress. The people of the North, numbering only twenty millions, and being thus almost exactly equal to the population of England alone, not including Scotland or Ireland, maintained an army which, during the period of active operations in the field, was seldom less than half a million in number, and during the last eighteen months of the war, probably amounted to eight hundred thousand men constantly under arms. Our navy, built in great part after hostilities commenced, numbered at last over six hundred and fifty vessels of war, mounting about five thousand guns, many of which were

¹ Some of the topics considered in this paper have ceased to be of immediate interest and importance, and it may seem unwise to renew the discussion of them at this late day. But it is not my purpose to revive an obsolete debate. The article is inserted here partly as a contribution to history, as a record of the feelings and reflections of the people of the North in looking back upon the great occurrences of the war which were then fresh in the memory; and partly as an attempt to preserve those teachings of experience in respect to the principles of finance and the great truths of Political Economy, which may be set forth through a criticism of the management of the finances during this memorable contest. It is only necessary to remember that the paper was written less than six months after the surrender of General Lee's army, which was virtually the end of the war.

of much larger calibre than had ever been put afloat before. The United Kingdom of Great Britain and Ireland, when it put forward its greatest energies during the last year of the war against Napoleon, its population then consisting of eighteen millions, had but two hundred and twenty thousand men in its regular army; and even if the regular militia, who never visited the scene of active operations, be added, the aggregate hardly exceeded three hundred thousand.

The task which the vast armaments of the North had to perform was the entire subjugation of at least eight millions of whites, who were fed, and to a considerable degree supported, by four millions of slaves. The disparity of numbers was certainly great in favor of the Free States. But it must be remembered that, in any war, the party which acts merely upon the defensive has an immense advantage; and this advantage was especially great on the side of the Confederates, owing to the vast extent of their territory. The area of the Slave States, not including Maryland or Delaware, exceeds eight hundred and thirty thousand square miles, and is therefore about equal in magnitude to the whole of Great Britain, France, Austria, Spain, and Italy united. With the exception of Texas, the whole of this vast region was penetrated and overrun by the armies of the North. While this aggressive movement was going on, it was necessary to guard against a counter invasion a frontier line extending from the eastern limits of Kansas to the mouth of the Chesapeake, a distance of over thirteen hundred miles. A coast line over thirty-five hundred miles in length had to be blockaded, and the long reach of the Mississippi River below Cairo had to be opened, and kept open, through a hostile territory.

The difficulty of overrunning the vast country of the enemy was much increased by the sparseness of the population, by the large tracts of hills and forests, and especially by the want of good roads. European generals, accustomed to conduct campaigns only through the populous regions of the Low Countries, France, and central Europe, where the ground is perfectly cultivated, the crops are abundant, and numerous and excellent highways afford every facility for the movements of heavy columns of troops in any direction, would have been dis-

heartened at the very thought of leading a great army through such wild districts, in the face of an enemy acquainted with every foot of the ground, and finding firm allies in every log cabin. The very name of the region within which were fought two of the most sanguinary battles of the war, "the Wilderness," suggests the great difficulties which our generals had to encounter. In truth, the greater part of the ground which the army of the Potomac fought over, from the beginning to the end of the war, was little more than a wilderness, intersected not by roads, but by muddy cowpaths. East Tennessee, in particular, is a vast natural fortress, entirely surrounded by great ranges of mountains, which even our best troops might have found impregnable, if some loyal hearts and stout hands had not luckily dwelt there among the hills. Little use could be made, under such circumstances, of the tactics and strategy of the Old World; a new science of war had to be invented for the occasion. Railroads and navigable streams formed, it is true, avenues of approach to some important points in the heart of the enemy's country. But these were comparatively few in number, separated by vast intervals from each other, and difficult, if not impossible, to be guarded along their immense length against a hostile population. It was not till the genius of one of our military leaders, who has fairly earned his place among the most illustrious generals either of ancient or modern times, devised and executed a plan for quitting these lines of operation, abandoning all connection with a base of supplies, and striking off through the centre of the enemy's vast territory on a devastating march, the length and breadth of which reduced even Napoleon's campaign in Russia almost to insignificance, that the problem of completely subjugating a great and determined nation, inhabiting a country of vast extent and boundless resources of defence, can be said to have been fairly solved. Other captains have known how to win great battles; but Sherman was the first to accomplish what great authorities had declared to be impossible, — to thoroughly subdue a whole people.

I have thus briefly alluded to the magnitude and difficulties of the war, in order to account for that feature of it which belongs directly to our subject, — the enormous expense at which

it was carried on. Here, again, history fails to afford any parallel to the facts which we have to consider. It had long been the boast of our people, that we had nothing which deserved to be called a National Debt; that ours was the cheapest government on earth, and, as a consequence, that we were more lightly taxed than any other people. Perhaps these assertions were not strictly true, though there was more foundation for them than there usually is for national boasts. They were true in the main, so far as concerns the National government alone; but taking the aggregate of our National, State, and municipal institutions, they require considerable qualification. The burden of municipal taxation has long been heavy, especially if we regard great cities, such as Boston and New York; and the grand total of public debt, including that of the individual States, as well as of the cities and towns, was by no means inconsiderable. Perhaps the chief reason of the heavy expense was, that in this country we have always assumed to do more at the public charge than elsewhere, and to leave less to individual enterprise. Thus we educate the whole people at the public cost, and our States and municipalities have aided enterprises of internal improvement and general charity more, perhaps, than was prudent. But however this may have been formerly, it is certain that we now [1865] have very different reasons for self-complacency. If inclined to boast at all, and it would be unreasonable to expect that we should immediately overcome the force of long habit in this respect, we must now congratulate ourselves that, during the last four years, we have spent money at a rate for which no precedent can be found on record, and that we are now the most heavily taxed people on earth.

Hitherto, the heaviest and most rapidly accumulated National Debt was that of Great Britain. At the beginning of the great contest with France, in 1793, this debt amounted to about two hundred and fifty millions sterling, having been recently more than doubled in amount by the war of the American Revolution. When the contest was ended by the final downfall of Napoleon, in 1815, the debt had risen to about eight hundred and fifty millions, being an accumulation of over six hundred millions sterling, or somewhat less than

three thousand millions of dollars, in twenty-two years. In the spring of 1861, the United States owed only seventy-five millions of dollars; in the summer of 1865, if we include outstanding claims and certificates of indebtedness, they owed little less than three thousand millions. In other words, during the four years of the contest, we incurred almost precisely the same amount of debt which England did during the twenty-two years of her struggle against the French Revolution and the Emperor Napoleon. We ran in debt over five times as fast. This is not all. During the same four years, the individual States of the North, together with the cities and towns, were obliged to effect heavy loans in order to fill their quotas, and for other purposes of the war. Massachusetts alone thus increased her debt from less than two, to more than twenty, millions. The aggregate of these State and municipal debts, a considerable portion of which may be ultimately paid by the general government, cannot now be estimated; but there can be little doubt that the aggregate indebtedness of the American people in their collective capacity now equals that of the United Kingdom of Great Britain and Ireland. Of course, on account of the higher rates of interest as yet paid, the annual charge of our debt is considerably larger than that of the English. The largest expenditure of the British government during any one year of the war with France was about five hundred and fifty millions of dollars; of our government, during the civil war, it was at least one thousand millions.

These facts are certainly of great interest and significance; if it were not for our deep and lasting conviction of the immeasurable importance of the cause for which the people gladly took this immense burden upon themselves and their posterity, it might even be said that they are appalling. The transition has been so sudden and overwhelming, that it is difficult at this early day to measure its extent, or to estimate fairly its nature and consequences. I shall not attempt to conceal, or even to palliate, any of the evils of this great change in our financial condition. At the same time, a fair view of the whole case, under the light of those great principles of economical and political science, which are now fully

established in theory and verified by the experience of the civilized world during the last two or three centuries, will suggest many reasons why we should not look upon the future either with dread or despondency. A great National Debt is undeniably a great evil; and the heavy taxation which it inevitably produces, if not the most serious, is certainly the most annoying, of all drawbacks upon national prosperity. Hitherto, in this country, our boast has been that we were free from all great burdens imposed by the government; in future, if we boast at all, it must be that we are able to bear immense burdens without flinching. Hitherto, with us, the tax-gatherer has been but an infrequent visitant, and one whose hunger was easily appeased. At present, we are doomed to meet him at every turn, to find him prying into all our concerns, and interfering with every employment which we can take up. Almost every time that any person, in the ordinary transaction of business, signs his name, he must affix to it a stamp of greater or less cost. We are taxed for our food and drink; for the clothes that we wear; for the books and newspapers that we read; for the fuel, gas, and oil that we burn; for our medicines when we are sick, and our diversions when we are well. To adopt in part Sydney Smith's lively illustration, the baby must be rocked in a taxed cradle, and the old man must sleep at last in a taxed grave.

It cannot be denied that all this is a severe discouragement to industry and enterprise. Suppose the aggregate weight of the taxes to be not more than five per cent. of the total annual product of the labor of our people, — a supposition which is probably below the truth. Then the effect of imposing these taxes is, not merely as if a blight had suddenly fallen on the whole land and swept off one twentieth of the whole crop; but, as the evil is renewed each successive year, it is as if all the fields were struck with partial but lasting sterility, so as to be rendered incapable for many years of yielding more than nineteen bushels, where they formerly yielded twenty. The proceeds of all our mines, fisheries, manufactories, and industrial undertakings, are diminished in the same proportion. To this extent, also, prices must generally rise and wages fall. As Adam Smith remarks, heavy taxes on necessaries become

“a curse equal to the barrenness of the soil and the inclemency of the climate.” Labor is rendered less productive, and accumulation more slow and difficult. Our annual burden is now so great, that with all the care which can be exercised in its apportionment and distribution, a large portion of it must fall on necessities, and a still larger part on the ordinary comforts of life. It cannot all be placed on silks, fine linens, personal ornaments, costly furniture, and the like; for such commodities form but a small fraction of the aggregate expenditure of our people, and if the assessment upon them is made exorbitant, it becomes prohibitory, and the consumption falls off so much that the revenue is not benefited more than it would be by a lighter rate. Accordingly, tea, coffee, sugar, tobacco, and the coarser and more common manufactures of cotton, wool, and iron, must be assessed, as they have been, with no sparing hand. And for clerks, most clergymen, small mechanics, even common laborers, such taxes become oppressive, and often entail severe privation. Tobacco is a luxury, it may be said; so it is, for the rich; but for large classes of the poor, long habit has rendered it a necessary, though perhaps a pernicious, indulgence.

It is a common but delusive mode of estimating the weight of taxation, to compare its amount with the total annual product of the national industry; and on finding that it bears but a small proportion to this product, — in the case that I have supposed, only five per cent., — to jump to the conclusion that it may be very easily borne. But it must be remembered, that the whole nation must be supported for a year out of this annual product, much the larger portion of it being thus necessarily consumed in supplying us with food, drink, clothing, and shelter till new products can be created. It is only from the savings of income, from the *surplus* of the annual product over this necessary annual expenditure, that capital can be accumulated and wealth increased. Now this surplus is relatively small; for a very large class, it is nothing; they spend as fast and as much as they earn or receive. For most of the remainder, — that is, for those who are really frugal, or “money-getting,” as we term them, and on whom the whole progress of the community in opulence must depend, this sur-

plus cannot exceed on an average ten per cent. Now five per cent. on the annual product takes away just half of this residue, and thereby makes the accumulation of capital only half as rapid as it was before the imposition of the tax. In truth, the diminution is more than half; because frugality itself is discouraged when half of its reward is taken away. Men save less, and become apathetic in respect to the future. The very sources of national prosperity are partially dried up.

To these evils of a great National Debt and heavy taxation must be added their demoralizing effect upon the politics of the country and the character of the people. Large financial operations by the government multiply the temptation and the openings for intrigue and fraud, and cause the results of these evil practices to be far more injurious to the great interests of the nation. On this account, I fear that what may be called the heroic age of the Republic is past and gone. Henceforward the virtues of simplicity, frugality, and a disinterested patriotism are to be of less account and more infrequent occurrence in our national concerns. When every financial act by Congress and every movement by the United States Treasury, through its inevitable effects upon the stock market, must cause millions — even tens and hundreds of millions — to be lost or won, we may expect the whole machinery of political management, official corruption, and party strife to be brought into large and vigorous action. The contest of opposing factions will not, perhaps, be fiercer, but it will be far more sordid. The struggle will be to determine, not merely who shall be fed at the public crib, but among whom the whole contents of the barn shall be distributed. The battle will be waged more furiously, and with less scruple as to the amount of harm done to great national interests, because the rewards of victory will be immense. Unless a higher and better class of statesmen can be found, and raised to stations of great public trust, than those who have too frequently of late years disgraced our national councils, I fear a marked deterioration of the character of our government and the political habits of the people.

I have endeavored to state these evils in the present and future state of our financial affairs frankly, and yet without exaggeration, in order to prepare the way for regarding the

other side of the picture. Make what allowance for them we may, there is still much reason for looking back with pride, and forward without despondency. The evils of a vast National Debt and a heavy system of taxation are great; but they are the price which we have paid for a restored and strengthened Union, and for striking off the fetters from four millions of slaves; and I believe the price is not exorbitant. Henceforward, whatever blame foreigners may impute to us, they cannot cast "slavery" in our teeth. We have wiped off the only great blot on our national escutcheon, and that, too, at a cost, a sacrifice, which must forever redeem our people from the reproach of being a generation of dollar-hunters. And the exertions through which we have accomplished this great good have established the position of this country as the first military and naval power in the world. Certainly no kingdom or empire in Europe could fit out and maintain such armaments as we have kept up for four years, could wage so many and so desperate conflicts with them, could overrun so vast a territory, and come out of the protracted struggle at last with so few tokens of exhaustion. Russia alone has perhaps as great defensive power, though her means of offence are less, and her maritime power must always be comparatively insignificant. Moreover, Russian statesmen have long recognized the truth, that their country and the United States are natural allies, with no possible cause of opposition or rivalry, and with every inducement to peace and friendship. Alone among all the powers of Europe, Russia has manifested full sympathy with our Northern States throughout the Great Rebellion; and with her for an ally or a friendly neutral, America has henceforward no cause to fear the world in arms.

Of course, we all desire that the great advantage thus gained may be used only for defensive purposes.

"It is excellent

To have a giant's strength; but 't is tyrannous

To use it like a giant."

It is an advantage to have firmly established for the future our right to be let alone. It is no satisfaction to a right-meaning man to know, that he is strong enough to be able to bully others with impunity; but our recent experience has taught

us that it may be a great satisfaction to know that we cannot safely be bullied. At the time of the affair of the Trent, Mr. Bright reminded the English ministers in Parliament, that it was no great proof either of strength or manliness to threaten a man who had his right arm in a sling. Perhaps even the "Times" newspaper may by this time have some doubts, whether it would be perfectly safe for England to bully the United States, even if the right arm of the latter country be in a sling.

The war has given us a consciousness of our own strength; but there is little reason to fear that it has so far established military habits among the people, or so far developed in them a love of strife and a thirst for military adventure, as to render it difficult in future to maintain peace with other nations. On the contrary, our immense army of volunteers hailed with joy the close of hostilities, not merely because the cause for which they fought had triumphed, but because it announced that their services were no longer needed, and they were at liberty to go home and resume their former occupations. Those regiments deemed themselves most fortunate who were the first to be disbanded; all were in a hurry to leave the battle-field and the camp behind them. So it must always be. However it may be in the Old World, in a country like ours a soldier's life has but few attractions, as there is no difficulty in finding easier and more profitable employment at home, among the varied pursuits of peace. The extinction of slavery has removed all desire for the annexation of foreign lands. We have enough to do to cultivate the territory which already belongs to us; Canada or Mexico would be only a burden, and the possession of either might imperil the Union which we have fought to reëstablish.

For these and other reasons, it does not seem probable that a large standing army will ever be necessary for our protection. The country will find no unprovoked assailants, for the military and naval reputation which it has acquired will be an abundant safeguard, even if its last fortress should be dismantled. The history of the Great Rebellion, while it shows the priceless importance of military and naval training-schools, like West Point and the Naval Academy, seems to me to dem-

onstrate the inutility of great standing armies. What regular troops we had at the outset accomplished nothing; the war was really fought and the victory achieved by volunteers. Besides, for many years to come, we may be said to possess already a powerful veteran army. In one sense, the troops of Grant, Sherman, and Thomas, — aye, and of Johnston and Lee, — are not disbanded; they have only gone home on furlough. Should any real emergency arise, the first bugle-call would bring the larger portion of them again into the field. A few black troops may be needed to garrison the forts along the Southern Atlantic and the Gulf coasts; and a regular army no larger than we had before the war may still be maintained, as before, to perform the functions of a military police. But the expensive folly of keeping a vast number of troops on foot in a time of profound peace, merely as a menace to one's neighbors, may be left to the powers of the Old World.

Again, there is the best reason to believe that the very thing which most persons regard as a proof of financial weakness is really the firmest safeguard of national union and strength. Say what we may about the evils of a great National Debt, it is still incontestable that such a debt will do more to tighten and strengthen the bonds which now hold our Union together than all other causes united. Especially is this the case when the debt is contracted, as ours in the main has been, in the form of great popular loans, every class in society, down even to that of the common laborers, being represented among its holders. If there had been one hundred thousand holders of national stock south of the Potomac and the Ohio, this rebellion against the national government would have been impossible. With a million, or even half a million, of owners of such stock scattered throughout all the States, we should never again hear a whisper of disloyalty to the government which punctually paid the interest on its bonds. It was the great National Debt of England which, in April, 1848, converted every fourth man in London into a special constable to fight for the government, and made the vast assemblage of the Chartist on Kensington Common a ludicrous failure. The heavy debt of Austria, the same year, prevented that conglomerate empire from being shivered into as many fragments as it counts races and lan-

guages among its subjects. Our debt has already become a great Savings Bank for the people, investments in which have been so popular, that, especially during the last eight or nine months, investments in Savings Banks, strictly so called, have materially diminished. It is no small gain that every journeyman mechanic or common laborer, who owns a fifty-dollar seven-thirty bond — and their number is probably greater than I should now venture to estimate — has become deeply interested in the safety, the well-being, and the financial honor of the government which now punctually pays him one cent a day.

Moreover, the very circumstance that this immense debt was contracted in the brief period of four years, when the country was dissevered, and the hearts of the people racked with the pains and anxieties of a terrible civil war, affords the clearest possible indication of the magnitude and the elasticity of the national resources. English writers have often boasted, and with good reason, of the enormous wealth of their nation, and the confidence that was felt in the stability and honor of the government, in that the ministry were able, in the very crisis of their great struggle with Napoleon, to raise each year with ease the great loans that were necessary to meet the annual expenses of the war. In the last and most expensive year of the contest, these loans amounted to forty millions sterling, or less than two hundred millions of dollars; and the English historian of the period remarks: "Such was the unshaken credit and inexhaustible capital of Great Britain, that these prodigious loans were raised, in this the twenty-first year of the war, at the low rate of four and three fifths per cent. of annual interest; and that even on these reduced terms" there was great competition among the lenders. But in the last year of the Great Rebellion, the loans raised by our government, and taken up by the people of the loyal States alone, were four times as great, amounting to eight hundred millions; and this, too, though the war was fought on our own territory, though one third of our States and people were in arms against us, though what had been two of our great staples of export, cotton and tobacco, were entirely cut off, and our foreign commerce, under the operations of a heavy tariff and of piratical cruisers, fitted out

and manned in English ports, had lost at least a third of its natural dimensions. Great Britain never suffered from the tread of an enemy on her own island ground, all fears, even of a French invasion, having passed away at least ten years before the downfall of Napoleon.

The fact, indeed, that all our debt was primarily contracted to our own people, and is still to a great extent owned within the country, is an independent source of gratification and hope in the present aspect of the finances. The government has never been obliged to contract a foreign loan; and though, during the last year of the war, American stocks found an abundant market in Europe, they were sent thither only by individuals, and not from necessity, and only because foreigners prized them even more highly than our own countrymen. Of course, the reason for such higher appreciation is, that loanable capital is relatively cheaper on the other side of the Atlantic, and must always remain so, so long as the profits on the employment of capital are greater at home than abroad. Thus, it is an indication, not of the poverty, but of the immense natural wealth, of California, that the annual rate of interest there is from twelve to eighteen per cent. Such a domestic debt as that which we are now laboring under, — and the same thing must be said of the national debt of England, — is one of a peculiar character. In one sense, the country is not in debt at all, but the people, in their collective capacity, are indebted to a portion of their own number, as individuals; so that every creditor of the government is at the same time its debtor, and is obliged to pay in part the very interest-money which he receives. What is this but a debt of the right hand to the left, or paying out of one pocket into another?

This fact, as I have said, is a source of gratification and hope; but it must not be pressed too far, for it does not actually render our financial condition one whit the easier. The people of this country, or of any country, form a unit, or are united into one body, only in a political sense; most of our rights and obligations are such as adhere to us merely in our individual capacities. If deeply in debt, the discomfort of my position is not at all alleviated by the fact that my creditor happens to be one of my own countrymen. And if a large and

wealthy corporation owe me a considerable sum, I am so much the richer, even though I am a stockholder to an insignificant amount in the very corporation which is my debtor. Just so, it is a burden, and a pretty heavy one, for every individual in the community to be bound to pay the government each year one twentieth part of his earnings, because the government is deeply in debt; and the burden is not made lighter by reflecting that nineteen twentieths of the sum thus assessed upon him is paid to a fellow-countryman, perhaps a neighbor.

But the matter may be viewed in another aspect. The ability of a portion of our people, during only four years of war, to lend to our government 3,000 millions of dollars, the whole nation during the same period contributing about 750 millions more in various forms of national taxation, is but one indication among many of what certainly appears, at the first sight, to be the most startling phenomenon in the financial history of the Great Rebellion. The aggregate sum furnished by the people of the loyal States during these four years, in the form either of loans or taxes, to provide for the general wants of the government and for carrying on the war, was 3,750 millions of dollars, a sum almost exactly equal to the English national debt; and if we include State and municipal taxes, and loans *raised exclusively for war purposes*, considerably exceeding that debt. The marvellous phenomenon indicated by these statistics is, that this four years period of the most awful civil war of which there is any record in history has been, in all that regards the financial, commercial, and industrial interests of our northern people, a period of wholly unexampled prosperity.

Certainly I have no disposition to palliate the horrors of this war; and I know that the darkest picture which I could draw of them would be instinctively approved by the heart of every one that hears me. This fearful contest has withdrawn about one fifth of the able-bodied population of the North, and nearly the whole of that of the South, from the peaceful pursuits of industry in order to engage them in the terrible occupation of killing each other. It has devastated eight or ten large and formerly flourishing States, large portions of them being swept, as it were, with the very besom of destruction. It has cost

the North alone nearly half a million of lives, many—very many—of them being of our best or bravest. The happiest portion of those whom we have lost have fallen by the bullet or the sword; a much larger number, by some of the numerous forms of camp disease; most of all to be pitied are those who have perished of exposure or starvation, while they were herded together like cattle in the frightful prison-pens of the South. The war has covered the land with mourning, for there is hardly a house in which there has not been one dead. Far, very far, is it from being any consolation for these losses and misfortunes, that you should be told of the large gains of commerce and manufactures, of the rich rewards which industry has reaped, while this scourge of God has been drawing tears from every eye. Rather let this striking contrast remind us, that riches are not man's highest good, and that a sudden increase of them may appear even as a bitter aggravation and mockery of the sorrows which divine justice has brought upon us for our sins.

And yet it is true, that the people of the North, as individuals, are richer now than they were at the opening of the war. Not only has the industry of the country been unimpeded; it has been galvanized into something like feverish activity; and some providential circumstances, like the discovery of our enormous supplies of petroleum and its numerous uses, have favored its large development. Never were labor and enterprise rewarded with larger gains. While the government was sinking deeply and rapidly in debt, the burden of private indebtedness, of pecuniary obligations between man and man, was probably never less than at the close of the contest. The fluctuations in the value of the currency, injurious in all other respects, have had at least this one good result, that they have diminished the length of credit given in all bargains of sale, and reduced business very nearly to what is called a cash basis. Merchants and manufacturers made large gains through the great rise in the prices of their commodities on hand at the outbreak of hostilities. The immense demands of the government for the supply of the army and the creation of a navy have kept our manufactories of wool and iron in full and profitable employment, and stimulated in a high degree the mar-

ket for our agricultural products. The dividends on bank and railroad stocks have been very high throughout the war. The great demand for labor has caused wages to rise in proportion at least to the increase of profits, and more than enough to make up for the depreciation of the currency. It is true, that one large class, those living on fixed incomes, have suffered severely from the rise of prices caused by the fall in the value of money, — a loss, in their case, not made good by any equivalent increase of income. But this difficulty was bridged over at the time by enforced economy on their part, and, as a class, these persons are probably now not much poorer than they were when the war began. The whole community is certainly much wealthier.

This phenomenon of the rapid increase of private wealth amid all the losses, anxieties, and sufferings of a sanguinary and protracted war, is one which demands careful analysis and study. It is not without example; perhaps we may say it is the ordinary result of a state of war operating upon a highly civilized, industrious, and enterprising community, who have capital enough to start with, and are so fortunate as to escape the evils of direct invasion. English commerce and manufactures were never more prosperous, on the whole, than during the long contest with Napoleon. Even France, where at this period industry was not so well organized nor capital so abundant, was probably wealthier in 1813 than in 1794; and her impoverishment afterwards is sufficiently accounted for by the double invasion and conquest of her whole territory in the last two years of the struggle.

From this rapid glance at some prominent features of the case, it is evident that we in this country have much to learn from the financial, as well as the political and military, history of the Great Rebellion. It would be strange indeed, if the rich experience of the last four years had not thrown new light upon some of the great problems, hitherto imperfectly worked out, in the sciences of political economy and finance. We have been living fast, and studying in a terribly severe school. Let us try to bring together and remember some of the lessons that we have learned, with a view, not merely to the general increase of knowledge, but to the immediate direction

of our future conduct, and to making provision for possible future emergencies. The wisdom or folly with which matters are conducted at Washington is henceforth to affect us more nearly than it did when we had no National Debt that deserved the name, no national taxes which were not insignificant by the side of our municipal burdens, and no system of banking extending throughout the country, and yet placed entirely under the control of Congress and a Secretary of the Treasury chosen at hap-hazard.

In any science, when the phenomena are so complex and intricate as are those of currency, banking, and finance, a mere record and picture of them, in the order of their occurrence, will be of no use, and will even tend to create and perpetuate error and mischief. The bare experience of a banker or a capitalist in the routine of his business, even when united with much sagacity in foreseeing the effects upon the money and the stock market of public events which are passing or near at hand, will be profitless for instruction or for any large and correct view of the operation of these events, if it be not coupled with knowledge of the history and principles of financial science, and adroitness in applying these to the analyzed results of current phenomena. Mere experience, as Coleridge has reminded us, is like a lantern in the stern of a vessel, which throws light only upon the waves behind us. Popular illusions are rife on the subjects of money and finance, and are embodied in the very language in which we speak of the ordinary transactions of commerce, just as the phraseology in which we still speak of the rising and setting of the sun, and other astronomical phenomena, if taken literally, contradicts the Copernican system, the truth of which we all admit. Owing to the constant use of such language, the true theory of money, when nakedly stated, seems like a string of paradoxes, which are contradicted by the common sense of mankind. Yet the truth of this theory is now so clearly established, and the course of events in the commercial world, as well as our recent experience in war, has so largely illustrated it, that its fundamental principles may be regarded as axioms, which no one who understands them thinks of contesting.

It has been our fortune during this four years' war to make

quite as many and as serious blunders in the conduct of the finances, as in the management of the armies in the field. It would be idle to attempt to hide these errors, or even to palliate them; and fortunately it is not necessary to do either. The record of these eventful years still contains so much that is honorable to the spirit of our people and flattering to their pride, that it needs no great exercise of candor on their part humbly to confess every fault which they have committed, either in civil or military strategy. If we have made mistakes, we have known how either to repair them or to triumph in spite of them. If we have had feeble and incompetent generals, we have been able to get rid of them, and to put men in their places whose just fame will not suffer by comparison with that of most of the great captains of Europe during the last two centuries. If we have expended twice as much treasure, and contracted at least thrice as much debt, as was necessary, still it is consoling to remember that the whole of this vast expenditure has been defrayed by our own industry, and that the power and the willingness of the North to continue the struggle, if need be, for the attainment of its original purpose, were seemingly not one whit less than they were when the war first broke out. We have been obliged to improvise both our military leaders and our financial statesmen, and the wonder is that we have succeeded so well.

It is an important maxim, that what is theoretically best as a measure of finance is not always politically expedient. The problem to be solved by the Secretary of the Treasury and his supporters in Congress was not exclusively financial; they had not to ask themselves merely how this fearful and protracted civil war could be carried through with the least possible expenditure of treasure, with the smallest interruption of the nation's industry, and with the entailment of as light a burden as possible on posterity. If to find an answer to that question had been their only duty, we know not that any severity of censure of their proceedings would be unfair or misplaced. But they had to look farther. They had to consider a division of opinion, a separation of parties, even at the North, and to ask themselves whether the whole cause, the cause of Union and of the freedom of every human being born on American

ground, might not be imperilled by the institution at once of those vigorous measures of finance which the magnitude of the occasion so loudly demanded. As politicians, and especially as party politicians, it is now easy to perceive that they overestimated this danger, and that they did not do justice to the ardor and unanimity of the whole people in their attachment to the Union, and in their resolution to do and endure all rather than submit to its dismemberment. But standing where they did, and with the training which they had recently had in party conflicts, we cannot blame them for keeping this peril in view, though we can now see plainly that they were timid politicians and incompetent financiers.

This political faint-heartedness is all that can be alleged to palliate — we do not say to excuse — the first great blunder in the financial management of the war. Congress, which assembled in extra session in the summer of 1861, a few months after the outbreak of the rebellion, failed to take any adequate measures to support by taxation the national credit, though it was now apparent to all that immediately, and for a long time to come, this credit was to be strained to the utmost. The wants of the Treasury were immense, and were pressing at the very moment. An army of half a million men was rapidly assembling, and all its wants were to be provided for; a navy was not merely to be fitted out, but to be created; all the munitions for war on the largest scale were to be furnished. The spirit of the nation was high; in the whole history of the world, excepting perhaps the first outbreak of the great French Revolution, no parallel can be found to the wave of enthusiasm which overspread the North after the attack on Fort Sumter, and which has been aptly called “the awakening of a great people.” This enthusiasm was shared as fully by the rich as by the poor, as was manifested by the munificence of private gifts in aid of enrolling and caring for the soldiers. Heavy taxes imposed at once would have been received with acclamation, and paid with alacrity, for the country was rich as well as willing. The action of Congress alone in all financial measures, though not in military affairs, was feeble and inefficient; and great blame must also be laid on the Treasury department, for it does not appear that vigorous action was even counselled

by its head, since nearly all that he did recommend, we believe, was actually enacted into law. Except some insignificant modifications of the tariff, a direct tax of \$20,000,000, imposed on the States, and an income tax of only three per cent., both to be assessed and paid only after the lapse of a year, were the only measures adopted to raise money except by loans.

Prospective taxes! Taxes to be levied a year ahead, and then but to an insignificant amount, as the only means of supporting an army of half a million, when the enemy were already thundering at the gates of the Capitol, and when it was feared that neither Washington nor Baltimore could be defended against them! Why, after the first battle of Bull Run, which took place before the passage of this tax bill, it appeared doubtful to many persons whether, a year hence, there would be any United States in which these imposts could be collected. Capitalists do not relish such postponed and contingent security for their money. Congress seemed aware of this fact, and was thereby induced, in the bill for borrowing money, to commit its second great financial blunder, by instituting a system of short loans, which, by maturing before there was any reasonable prospect that the war would be over, only enhanced the much greater difficulties of the Treasury at a later period.

The effect on the credit of the government of this feeble action of Congress was immediately apparent. The loan of two hundred millions was negotiated only with great difficulty at over seven per cent., though the five per cent. bonds of the single State of Massachusetts were even then above par, and though the national government had borrowed money recently with ease at six per cent. In fact, this loan could not have been negotiated at all, if it had not been for the patriotism of the State banks, which reflected and carried out the enthusiasm of the people. One effect of the subsequent depression of the public mind caused by this low state of national credit, and enhanced by the unaccountable sloth and inactivity of McClellan at the head of his noble army, even after the insults received at Ball's Bluff and by the blockade of the Potomac, was the aggravation of commercial difficulties,

which compelled the banks to suspend specie payments late in December, 1861. Congress accepted this act as a national necessity, and by a law passed the next February, authorized the Treasury also to stop payment in coin, and to issue one hundred and fifty millions of dollars in paper currency.

Here, we are compelled to differ in opinion from those who censure this law both as a blunder and a crime, and attribute to it all our subsequent financial difficulties. We maintain that, under the circumstances, it was unavoidable; and if proper measures had been afterwards adopted, especially if the due limit had been observed in the issue of government notes to take the place of the specie which had disappeared from circulation, there would have been no further shock to public credit, no injurious depreciation of the currency, no breach of faith, and that the act would even have tended to increase the national strength. The suspension, if wisely managed, might have continued as long as that of the Bank of England at the close of the last century, which lasted over twenty years, and during the first seven or eight of those years did not cause the currency to depreciate more than six or seven per cent. Certainly the immediate effect of the act of February 25, 1862, was to release about two hundred and fifty millions in specie from its employment as money, for which purpose it had become useless, to convert it into a commodity exchangeable for goods from abroad, and to give the government the benefit of a free loan, without interest, of this large sum, by merely issuing its own notes in place of the coin so withdrawn. These notes, *if not issued in excess*, would not have depreciated except to a trifling extent of four or five per cent., or not enough to cause any perceptible loss or embarrassment in trade; actually they did not so depreciate for about five months, as gold did not rise to as high a premium as five per cent. till the next June, though the banks had suspended in December. Still further, the State banks, by originating the suspension two months before Congress followed their example, had forfeited every shadow of a claim to be permitted still to use their own notes as currency; they had thereby converted their circulation into true "bills of credit," or paper money, which the Constitution expressly prohibits any "State" or State in-

stitution from emitting ; while this express prohibition, through what the lawyers call a negative pregnant, impliedly authorizes Congress to emit such money, even if it does not expressly authorize it to do so by granting to this body a power to "regulate the value" of money. It would have been strictly just, therefore, as it surely was highly expedient, to put a prohibitory tax upon the circulation of the suspended State banks, thereby driving it out of use altogether, and so creating another vacuum in the currency, to the extent of at least a hundred and fifty millions, which Congress might fill by an additional issue to that amount of national paper currency not liable to depreciation. The whole profit derivable from the issue of currency belongs of right to the people in their collective capacity ; and in the great struggle for national existence which was then pending, it was strictly equitable for the nation to exercise this right, so far as it could do so without injuring the rights of individuals by compelling them to use paper money which would depreciate or oscillate in value. Nothing can be more certain than that, by driving coin and bank-notes out of circulation, Congress might have gained for the country, in its sore need, the free use of at least four hundred millions of dollars, for an indefinite period, without interest, without injury to the national credit, and without discounting the resources of the future.

But what did Congress and the Treasury actually do ? In the first place, they let alone the dishonored State bank circulation, making no attempt to displace it, or even to force it (except some time afterwards, and to a very moderate extent) to contribute to the nation's necessities. Secondly, in defiance of one of the plainest principles of financial science, — a truth verified a hundred times by experience, and recognized by every banker, political economist, or statesman who has written or thought upon the subject for at least a century, — they proceeded to issue their own currency *in lavish excess*, in seeming ignorance of the fact that it would depreciate, or of the lamentable consequences that would follow such depreciation. They seem to have reasoned by induction, thus : We have issued two hundred and fifty millions of this money, and no harm has ensued ; therefore we can safely continue the issue to the extent of a thousand millions.

Νήπιοι, οὐδὲ ἴσασιν ὅσῳ πλέον ἤμισυ παντός.

For a clear and forcible statement of the truth which they ignorantly or wilfully disregarded, we will not quote any of the acknowledged lights of modern financial science, from Adam Smith down to Ricardo and J. S. Mill, though they all agree upon the point, merely because we have an American authority at hand which answers the purpose better. Nearly eighty-five years ago, John Adams, looking at the sad results of the old Continental currency, which were soon to produce a dangerous rebellion even here in Massachusetts, wrote thus to the Count de Vergennes: —

“The amount of ordinary commerce, external and internal, of a society, may be computed at a fixed sum. A certain sum of money is necessary to circulate among the society in order to carry on their business. This precise sum is discoverable by calculation and reducible to certainty. You may emit paper or any other currency for this purpose until you reach this rule, and it will not depreciate. After you exceed this rule, it will depreciate; and no power or act of legislation hitherto invented can prevent it. In the case of paper, if you go on emitting forever, the whole mass will be worth no more than that was which was emitted within the rule.” — J. Adams’s *Works*, Vol. VII. p. 195.

The precise deficit in this fixed sum caused by driving the specie out of circulation was perfectly well known not to exceed, at the utmost, two hundred and fifty millions of dollars. Yet the Treasury, acting under the discretionary powers which it had received from Congress, issued between March, 1862, and September 30, 1864, the enormous sum, in round numbers, of seven hundred and thirty-two millions of legal tender paper currency. This sum consisted (round numbers again) of four hundred and thirty-three millions of “greenbacks” or government currency proper, two hundred and twenty-nine millions of legal-tender Treasury notes on interest, twenty-five millions of fractional currency, and forty-five millions of national bank circulation. Of course, depreciation followed; and it is curious to observe how precisely the ratio of this depreciation conformed to the law as stated by Mr. Adams. The specie displaced was to the whole sum of paper issued, as we have seen, very nearly as one to three; and the price of a

gold dollar, in July and August, 1864, rose to \$2.80 in paper. The currency was put forth at intervals, and in successively increasing amounts, during two years and a half; and the price of gold taken at different times during this period indicated very accurately how much of this currency had then come into use. Thus the premium on gold, which had been trifling up to June, 1862, rose from twenty to thirty per cent. before the next October. From this time forward it fluctuated greatly, but with a general progress upward, till it reached 80 in May, 1864; and then, large amounts being issued suddenly to provide the immense supplies needed for the great campaign about to open, it mounted swiftly and with wild oscillations to 185 in July and August. In other words, in those months, \$2.85 in paper were needed to buy either one dollar in gold or any commodities which that single gold dollar could purchase.

Of course, this voluntary depreciation of the currency was a breach of public faith, and an avowal both of private and public bankruptcy. The act which sanctioned it authorized every debtor in the community, and the government, which was the greatest debtor of all, to diminish every obligation to pay money as much as the depreciation of the currency had increased during the interval between giving that obligation and its coming to maturity. Any person who, in return for goods purchased, gave a note at six months from February, 1864, for one thousand dollars, each dollar being then worth sixty-three cents in coin, would pay it the next August with one thousand dollars worth only thirty-nine cents each; that is, for six hundred and thirty dollars received, he repaid only three hundred and ninety dollars, or less than sixty-two per cent. But creditors are not always the losers; as the depreciation of the currency, when excessive, is subject to violent and sudden oscillations, it may happen that one who has contracted a debt when dollars are worth only forty cents each, is obliged to pay it when they have risen in value to sixty cents. In such case, all trade, beyond immediate cash transactions or mere barter, becomes a lottery, commerce is crippled and demoralized, and all faith in contracts is shaken.

But the government is far the greatest loser in the affair; and rightfully so, for it has not only broken its own faith, but

obliged other people to break theirs. To adopt Talleyrand's witty remark, which compresses into a nutshell the wisdom that is of this world, the act of the Treasury which produced this depreciation was worse than a crime; it was a blunder. As its necessities were great, and its breach of faith had been flagrant, it had voluntarily ruined its own credit, and could expect to be able to borrow only by offering the most usurious rates of interest. Accordingly, in the very acts which authorized the excessive issues of currency, Congress was obliged to stipulate that the interest — and by necessary implication the principal also — should be paid in coin. Accordingly, during the last twelve months, the depreciation being on an average two for one, the government has been borrowing enormous sums on the hard terms of covenanting to return two dollars for every one received, and of paying meanwhile ten or twelve per cent. interest. Of course, the public debt has accumulated during this period with frightful rapidity. To offer a still greater inducement for capitalists to take up the loans, it is further covenanted that the national stocks shall forever be free from either municipal, State, or national taxation; thus adding at least two per cent. to the already excessive rate of interest, and making a serious inroad upon the future capacities of the country to sustain the annual charge of the debt and reimburse the principal.

THE UTILITY AND THE LIMITATIONS OF THE SCIENCE OF POLITICAL ECONOMY.

FROM THE CHRISTIAN EXAMINER FOR MARCH, 1838.

“THE ‘Treatise on the Law of War and Peace,’ the ‘Spirit of Laws,’ the ‘Essay on Human Understanding,’ and the ‘Inquiry into the Causes of the Wealth of Nations,’ are the works which have most directly influenced the general opinions of Europe during the two last centuries.” Of the four works thus distinguished by so competent a judge as Sir James Mackintosh, the last is the most practical, and has most directly affected the course of legislation and the policy of governments in civilized Europe. We do not deny that similar changes and improvements would have been effected if Adam Smith had never lived. His work was the production of the age, and not of the individual, in the same way that the revival of letters, not the mere ingenuity of a German mechanic, caused the invention of the art of printing. The increased extent and importance of commercial enterprises in the eighteenth century, and the manner in which the attention of rulers at the same period was turned from disputes with each other, and devoted to nursing the prosperity of the communities over which they presided, *created a demand* for the discovery of true principles in Economical science. Vague suspicions were excited, that all was not right, — that there was some mistake in the well-meant efforts of government; loose notions of more correct theories were floating about, which Adam Smith embodied and published in a systematic form, at a period so near the time when they were promulgated by others, as to give some cause, though an inadequate one, to dispute the priority of his discovery. That the minds of men were prepared for such a change of opinions, was shown by the eagerness and

favor with which the publication was received. No work has been more successful in gaining the immediate approbation of all persons whom private interests did not induce to maintain an opposite theory.

Still, the science founded on this remarkable treatise has exerted only partial influence on the policy of states, and practical statesmen, as they are styled, have impugned its leading principles with an earnestness and apparent sincerity for which we can hardly account. Whence comes this difference of opinions? Why have legislators yielded a theoretical assent to doctrines which, in many instances, they have refused to reduce to practice? The frequent opposition between a speculative and a practical judgment will hardly explain the problem; for those cannot be termed theoretical truths, which are immediately concerned with the daily pursuits, and affect the most familiar interests of mankind. They do not belong to the class of doctrines which are usually contested between theorists and practical men. Founded on inductive reasoning from the most obvious facts, and confirmed by remarkable success in the experiments that have been tried, they are supported by a large number of persons most familiar with the *routine* of business and the minute details of legislation. Most of the important laws affecting the commercial and manufacturing interests of Great Britain, enacted during the past thirty years, have been founded on the principles of this science, and supported in Parliament on this ground. Mr. Huskisson's regulations of the silk trade, the recent improvement of the poor laws, the change effected in the charter of the East India Company, are notorious proofs of this assertion. Yet we meet with men grown gray in politics and legislation, who emphatically term the science of Political Economy a humbug, and its partisans a set of visionary schemers and theorists. The reputation of these men for talent and sincerity is too high and too well attested to admit of their being assailed in either respect. To say that they are committed to an opposite policy is to doubt their honesty; and to affirm that their private interests effectually blind them to the perception of truth, is to question their superiority of intellect. We do neither. Therefore the prejudice which they have conceived appears unaccountable at first sight.

We believe that both the *doctrinaires* of Political Economy and their opponents are in the wrong ; the former in reducing their principles to practice with too little regard to attendant and qualifying circumstances, the latter in questioning the truth of the principles themselves. The nature and objects of the science are not fully understood. The principles which it embraces are very general in relation to the objects to which they apply ; but this generality is obtained by the abstraction of those minute points of difference which, in the application of the truths, must again be taken into view. The propositions are founded on facts only less numerous than the various habits, dispositions, and circumstances of men. The ease with which common people reason correctly upon these facts does not prove that an extended and minute observation of them is unnecessary. It only shows their obviousness, — that we observe them unconsciously, and whether we will or no. We admit the Economist's premises, then, and assent to the correctness of his argument, but doubt the conclusion, because it seems impracticable as a rule. Make the proper allowances for the former omissions, qualify the application of the general result, and the apparent impracticability disappears. The case is similar with the theory of mechanics. The mathematician considers levers as straight lines without breadth or thickness, ropes as perfectly flexible, and disregards friction altogether ; thus he arrives at the most comprehensive and demonstrable conclusions. It would be very absurd in him to insist on the unqualified correctness of these results, and no less absurd in the practical mechanic to neglect entirely these general truths, and go blindly onward, feeling his way by practice and experiment. Yet the Political Economist who harshly insists on the immediate adoption of his principles, and the practical legislator who ridicules the whole science, commit an equal mistake. In argument, indeed, both may admit that the truth of the matter is as we have stated. Practically they both deny it. General maxims, it is true, must be applied with a cautious regard to the circumstances of each case ; but this admission does not affect the universal truth and practical importance of the maxims themselves. The truths are as comprehensive and unqualified as they appear to be in the statement. The

exceptions are so few in number that they admit of being enumerated and defined with the utmost precision. But the difficulty consists in ascertaining the proper scope of the principle, and the real character of the case which is proposed to be governed by it. Different sets of problems require different methods of solution ; the incorrectness of the result is often attributable to an improper classification of the question, by which we have been led to use a rule that was wholly inapplicable.

Writers on Political Economy are unconsciously influenced by a regard to the situation of their own country, the circumstances of its inhabitants, and the particular policy of its rulers. Their labors are, on this account, more useful to their own countrymen than they would have been if the generalization had been more extensive. But they deceive themselves when they insist on the universal application of the maxims. Thus, the opinions of British writers on the corn trade are biassed by the insular position of England, and its limited extent of territory. The power of supplying themselves at will with grain from the Continent depends on their political relations with the other governments of Europe. The caution which they evince in advocating restrictions upon importation, and encouraging to the utmost the cultivation of corn within the kingdom, is the well-grounded result of close attention to their peculiar position as a people. They deceive themselves, and others are deceived by them, who would make this caution universal, and place any other duties on foreign grain than those required to aid the national revenue. Again, the opinions of Mr. Malthus on population lead to certain conclusions respecting the policy of the poor laws *in England*. But these conclusions are not the less derived, in part, from a regard to the crowded population of the British empire, the immense number of those who seek charitable relief, and the entire absence among them of those feelings of pride and delicacy which compel the poor of many countries to endure the utmost suffering before they consent to throw themselves on the public. Obtaining aid from the parish is too common an occurrence among English laborers to admit the feeling of shame in such a case to control their actions. In this country, we are

not obliged to render life in an almshouse more irksome and uncomfortable than it need be, through fear that it may become a favorite place of abode for the suffering poor. Unless we see fit to do so on other grounds, we may refuse to alter our poor laws, without rejecting the theory on which Malthus rests his proposed amendments. We may admit the principle, but in our own case deny the application.

These remarks may throw some light on a question which appears to be of no small importance, — the propriety of combining an accurate and extended knowledge of statistics with the study of Political Economy. Writers on the science have objected to the practice of founding conclusions on facts alone, on the ground that our acquaintance with facts must necessarily be partial and imperfect. At the utmost, statistical accounts are true only for the time being, and principles deduced from them are falsified by every subsequent change. Again, a knowledge of all the facts in each case might lead us to adopt a policy the very opposite from that which would appear to be recommended by a partial consideration of circumstances. The prosperity of a country may be brought to prove the correctness of its system of legislation, when this very prosperity may exist in spite of the political measures, rather than in consequence of them. The excess of imports over exports is adduced by one set of reasoners to demonstrate that the country is running in debt; while others hold that the foreign commerce has been remarkably successful, — the returns so far exceeding the outfits. A general enhancement of prices may seem to evince the national welfare; but if it arises from the depreciation of the currency, it rather betokens national decay. These examples show the facility with which any principle may be made out by means of what Adam Smith has styled political arithmetic, and they justify the cautiousness of this writer against such a suspicious medium of proof.

But do we infer that facts are useless in Political Economy? By no means. The office of the Economist is to interpret facts, — not to prophecy what must be, but to explain what is. Statistical returns are thus the object of the science, though it is unsafe to consider them as the *data*, from which the original principles are derived. Instead of creating the rule, they gov-

ern its application. For instance, the peculiar situation of our own land is sufficient to qualify materially the force of the general maxims established by European writers. The mere fact that the ocean rolls between us and Europe, and the consequent delays and expenses of transportation, must influence our theories of foreign commerce, and restrict the reasoning heretofore applied to a system of import duties. We want an American treatise of Political Economy, one that shall contain not merely the higher truths that are strictly universal, and which no circumstances can limit or disprove, but the less general maxims founded on those of the first class, and on a careful observation of facts, that may form a text-book for legislators and statesmen. We want a work which shall bear the same relation to American institutions that the writings of Malthus and Ricardo do to those of England. We are yet a new people, and, during the past fifty years, the vacillating legislation of the country on the subjects of foreign commerce, domestic manufactures, and the currency, betrays an ignorance of our own vital interests, which shames alike the rulers and the governed. It is time to secure that advantage, at least, which may be gained by undeviating adherence to one general policy, though the system selected be neither the wisest in the abstract, nor the best adapted to our peculiar condition. Unfortunately, the conflict of interests between the States produces a heated discussion of questions relating to commercial and manufacturing policy, and the issue is too often decided at length on party grounds. This evil is irremediable in part; but the habit of general reasoning must tend to soften the acerbity of debate, and repress the more absurd declarations of extravagant theories, to which men are driven in the warmth of contest. It is full time that the higher subjects of legislation should be handled not merely by politicians, but by *speculative* men — we are not afraid of the epithet — who, separated from the din of parties, may propose and advocate measures on more substantial grounds than those of compromise and temporary expediency. It is possible, at least, for one to argue upon such themes, who has no views of political advancement, and no wish to decry the Bank or defame President Van Buren.

But if this end is ever to be attained, if Economical questions are ever to be viewed in any other light than in their relation to the schemes of party, greater attention must be paid to the collection and publication of facts. The science of statistics has hardly an existence in this country. The returns that are made by the Treasury department of the national government are meagre beyond description, and are published in the most ill-digested state. Immense labor must be expended to work them up into such a form that they may elucidate the condition of the country and the policy of its laws. Mistaken reasoning upon facts proceeds from imperfect perception of their mutual bearing, and from partial views. These evils can be remedied only by completeness in the returns, and by such scientific arrangements as may develop at once the real nature of the circumstances. A mere account of the variation of prices in the different markets of our extensive territory, and at different periods of time, must throw great light on the circumstances that affect production, and on the proper modes of regulating commerce.

Great caution would still be necessary in digesting theories and forming plans with exclusive regard to such statistical collections. The higher principles of Political Economy, from their obviousness and universality of operation, are in truth general facts, and reasoning founded upon them is eminently practical. They are deduced from common observation, and lie so closely within the sphere of experience as to appear trite in the enunciation. That competition will ordinarily produce equality of profits in the several employments of industry and capital, that a private person can manage his own business better than government can manage it for him, that on the welfare of individuals depends the welfare of the state, — these are not principles arbitrarily assumed in defence of theoretical legislation. Whatever conclusions are immediately inferred from them must be true; and it is only when the chain of reasoning is extended, and the consequences are remote, that statistics are of use to check the induction, and qualify or refute the ultimate rule. The class of legislators who reject the Economist's arguments as too abstract, and his projects as impracticable, and profess themselves to be governed only by

common sense and daily experience, are refuted by their own frequent changes of opinion and fluctuating measures. Circumstances bring them round to the very positions they formerly assailed, and they find themselves alternately fighting in opposite camps, without the consciousness of desertion or removal. Consistency is the fruit of those modes of thought which they formally condemn. So true is it that a short-sighted policy is ever a temporary one.

In this country we are all legislators. The humblest individual who puts in a vote at town-meeting, exerts an influence on the laws, and does his part in determining vexed political questions. In recommending the study of Political Economy, then, we merely advise that such knowledge may be obtained as may fit a citizen for the proper exercise of his functions. The practice, if not the theory, of our government is to elect persons to office who shall represent the opinions of the electors, and not to delegate to the elected the power of thinking and judging for the community. The represented are not humble enough to suppose that their representative has better means, or a better capacity, to judge of the state of the country than themselves; but they insist on making the correctness of his opinions, as it appears to them, to be the principal test of his qualifications for office. Now, it is obvious that the bulk of the voters will look mainly to the candidate's opinions on those questions which must directly affect their own pecuniary interests. No government on earth, in proportion to the extent of country, is conducted at so little expense as our own; yet a candidate has no more certain mode of recommending himself to the affections of the people than by proposing schemes of retrenchment. We have heard of an old representative to the General Court from one of our country towns, who made it his boast that he had never voted for any proposition to spend the people's money; in other words, he had opposed every bill, whether judicious or not in other respects, which led to the expenditure of a single dollar. The consequence was, that he was elected every time he chose to be considered as a candidate. The common prejudice against direct taxation proves, that in a popular government the community must be cheated into those expenditures which are essential to the welfare of

the state. Nothing is more certain than that indirect taxation really imposes the heaviest burden, for the costs of collection are greater. But the tax is concealed, the enhancement of cost, which it occasions, being blended with the ordinary fluctuations of price. Universally, where the pecuniary bearings of a measure are indirect, the decision on its propriety is had on false or insufficient grounds, and the consequent mistakes of policy are frequent and serious. We are not Quixotic enough to suppose that the dissemination of scientific principles is possible to an extent that would entirely remedy this evil. But it is not unreasonable to believe, that, were the study of Economical science made more general than it is at present, the grosser errors might be avoided, and the character of our commercial legislation, which is now so uncertain and changeable, might be materially improved.

It is mournful to reflect, that, in a country where so much depends on the correctness of the opinions held by the people at large, hardly any progress has been made in defining and limiting the maxims of Political Economy for our own use, or in diffusing that degree of elementary knowledge which is requisite for the security and well-being of the state. The absurd prejudice against wholesale dealers in grain, which once caused an alarming riot in New York, cannot exist in a mind imbued with the simplest and most evident maxims of the science. Unless this degree of knowledge becomes universal, we may naturally expect, in a season of scarcity, the most frantic actions on the part of the populace. The experience of the last year has proved that, even in our extensive and fertile territory, a deficiency of breadstuffs is a possible occurrence. The recurrence of such a scarcity among a people who have no means of forming a correct judgment of its nature, causes, and remedies, and in whom the physical as well as moral power of the state resides, would be fraught with the most direct and mischievous consequence. In view of these and other possible occurrences, we think the propriety of paying greater attention to the progress and dissemination of knowledge on Economical subjects to be sufficiently evident.

But before this study could be introduced into our common schools, and cultivated to a greater extent in our colleges and

higher seminaries of learning, some improvements must be made in the theory of the science, and in adapting it to our peculiar wants and situation. We have already alluded to the two principal obstacles to the progress of the science on this side of the Atlantic, — the want of copious statistical returns, and the danger of confounding Economical discussions with party debates. The first of these difficulties cannot much longer exist. Industry may effect much by a proper use of existing means of information, and we trust the attention of Congress has not been called in vain to the urgent necessity of enlarging these sources of knowledge. The prejudices of statesmen may be done away by demonstrating the applicability and usefulness of the doctrines, or they may be driven to a more liberal mode of considering the subject by finding the people already in advance of themselves. The remedy of the other evil which we have mentioned is far more difficult. So strong is the influence of universal example, that we can hardly admit it to be possible for one to advocate or impugn the policy of a tariff on any other than party grounds, and with the wages and motives of a political aspirant. Till a more liberal sentiment prevails, we may well despair of hearing the subject discussed by men who can have no personal interest in the result, and who are well fitted by their previous studies and pursuits to agitate an abstruse and difficult question.

The forbidding appearance of the subject, as it is displayed in most of the formal treatises, the obscurity of the doctrines, and the abstract and repulsive nature of the reasoning employed, have appeared to some an insurmountable obstacle to the diffusion and popularity of the science. There are some grounds for this apprehension. Writers have exhibited the theme in its least inviting aspect, and have prided themselves on the severe and rugged appearance of their discussions, as if attractiveness of style and all embellishment and illustration were foreign to the occasion. But the "Wealth of Nations" proves that such a course is unnecessary; for the graceful diffuseness of the author's manner, and the abundance of examples, veil the abstract nature of the inquiry, and invest its harshest features with a secret charm. For this reason, if a foreign work must be adopted as a text-book in our colleges,

the writings of Adam Smith should be preferred. The want of method and the digressive character of the book are slight objections to its use, when the only object is to create an interest in the study, to furnish unexceptionable examples of the proper kind of reasoning, and to induce the pupil to think and judge for himself. We have great doubts whether the first principles of Political Economy have ever been set forth in a more satisfactory manner than by the founder of the science. A competent instructor might be trusted to suggest such circumstances as qualify the application of the doctrines in this country.

We are bound to declare that the preceding remarks have been suggested by the defects of Dr. Wayland's book, considered as a manual of instruction. In other respects, it presents many of those features which gained for the author's work on Ethics a well-merited popularity. The great fault of the work is its want of American character, — of adaptation to our peculiar circumstances and institutions. Practically considered, few principles of the science, as they appear in most treatises, are universally true. We have shown that they must be cautiously reduced to practice, when the attendant circumstances are different from those which the author or discoverer had in view. Dr. Wayland has hardly attempted to state the exceptions to the rules, or to limit the enunciation; and the usefulness of his book in this country is proportionably diminished. Thus, the argument respecting a legal provision for the poor sets forth a sound doctrine for English statesmen, proposing the only certain remedy for the greatest evil which their country suffers. In the United States, the evil does not exist. Properly speaking, no public relief is granted to the simply indigent, the few cases in which a home is afforded to the able-bodied poor being rightly considered as instances, not of charity, but of punishment. But the argument on this head is worse than useless, for it proves too much. Those who are able to work, says Dr. Wayland, should not be maintained at the public cost, because inviolability of property is essential to the social welfare. But the right of property is equally invaded when one receives without labor what is taken from another without an equivalent, whether the necessities of the

former are real or factitious, — whether his distress arises from his own fault or from circumstances without his control. Persons incapacitated by natural causes, the blind, the aged, the sick, have by this argument no better claim on the community than the indolent and the vicious. But we deny that the enactment of poor laws amounts in any case to the violation of a right. Property is a social institution, the creature of law, and is of course subservient to all the purposes for which society was created. It was instituted to promote the general welfare, and must therefore be subject to those limitations and restrictions which increase its tendency to this end. It cannot be for the general good that one man should perish from want, while another is rolling in wealth. The law takes from the latter what is barely sufficient to preserve the former from starvation. To take more would be to encourage idleness, and in this way to diminish the general stock of happiness. To take nothing would be to cause an amount of individual suffering that would equally lessen the sum of welfare in the community. The poor man has the same right to the portion assigned to him which the original possessor of the property has to the remainder; for both are indebted to the laws for what they enjoy, and in the judgment of the legislature, whose authority on this subject is supreme, both enactments are equally expedient. Put the question on the ground of expediency, not of right, and Dr. Wayland's conclusion is correct.

One great problem, the most difficult, perhaps, in the whole science, yet the most important, if we consider its bearing on the determination of many other questions, is passed over in this work before us with too little notice. We refer to the effects of great accumulation of capital, of vast improvements in labor-saving machinery, — to the possibility of the productive power in a community outrunning its ability and desire to consume. May not capital be accumulated to a point, beyond which there would be no possibility of employing it? May not habits of frugality become common to an extent that would check, rather than favor, the increase of wealth? If the wants of a community were confined to mere bread and water, industry would be required for no other purpose than for the raising of grain; and as the labor of one would in this way provide for

the subsistence of a hundred, ninety-nine would be thrown out of employment. What could one in this class offer in exchange for the hundredth portion of the other's produce? The luxurious habits of the rich are necessary to balance the effects of forced economy among the poor. If the higher classes submit from choice to those privations which less fortunate persons undergo from necessity, the demand for industry and capital would be too far restricted to admit of the universal employment of the one, or the general and rapid accumulation of the other. We cannot, therefore, agree with some Economists, that luxury is always an evil, for it tends to the equalization of wealth.

Before the principles of Economical science were much discussed, the increase of the population was the sole end which philanthropy had in view. In a given district, the quantum of happiness was held to be in direct ratio to the number of inhabitants. But the sturdiest opponent of Malthus must admit that an increase of the laboring population of England and Ireland, that miserable and degraded class, is hardly to be desired. A ruinous competition for employment, the reduction of wages to the lowest point that will suffice to keep life flickering in its socket, is the inevitable consequence of an enlargement of numbers. To increase the comforts of the multitudes who exist, rather than to call other multitudes into being, who must claim a share of the slender stock of enjoyments, is the dictate of cautious and reflecting philanthropy. "Before population can advance, there must be something on which it can subsist; before capital can increase, there must be something in which it may be embodied." The same doubts respecting the desirableness, even the possibility, of indefinite increase in the case of population, have now come to be entertained by respectable writers in regard to capital. We do not participate in these alarms. The evils that are feared seem to result more from defective political organization, than from the natural course of things as established by a beneficent Creator. An exposition of this remark may evince in some degree the necessity of modifying the Economical principles established in Europe, before they are applied to the inhabitants of this country.

The Malthusian principle, that population tends to increase faster than the means of subsistence, cannot be admitted, if a necessary connection can be shown between enlargement in the number of human beings and the augmentation of provision for their support. At first sight, such a connection would seem to exist. More cultivators will raise more products. A farmer who owns a hundred acres, and has but two sons to assist him in his labors, will suffer a portion of his ground to remain covered with wood, will entirely neglect some fields where the soil is lean and stony, and plough up in the whole, perhaps, not more than a tenth part of his possessions. Ask him why he does no more, and he will reply that he has not a sufficient number of hands. His "boys" and himself have enough to employ their time as it is. But should the number of his family increase to ten, a portion of the woodland is cleared up, the scattered stones are collected and formed into walls to protect the crops from the winds and invigorate the soil by their warmth; thrice as much land is dug up and sown, and the harvest is proportionably increased. The family is farther removed than before from the fear of want, for there is a yet larger surplus to be sent to market. Increase the number of laborers and the disposition to toil, and who shall prescribe bounds to the productiveness of the earth? Nature has scarped the mountain's side, but human industry has chiselled it into terraces, transported soil to the spot, and converted the bare and steep face of the rock into a smiling vineyard. It has drained the fens, and drawn the sustenance of life from the place which formerly sent forth only noxious and fatal exhalations. It has banked out the ocean, and where once the fisherman plied his oar and fleets were anchored, the fields are now waving with corn.

But the disciple of Malthus, chuckling over the powers of the "geometrical ratio," measures the earth, ascertains the number of square miles on its surface, and tells us how soon the human race, doubling once in twenty-five years, must come to jostling each other in their daily walks. He forgets that the speculation relates only to a distant futurity, that no country can yet be shown where the most approved methods of cultivation are carried to the utmost extent, and where a portion

of the inhabitants still perish from starvation. Moreover, the facilities of commercial intercourse are now so extended, that the theory cannot be applied, — it can have no practical truth, — till human industry and skill have exhausted the productive powers of the whole earth, till the last foot of ground has been tilled, and the last resources of agriculture have failed to meet the increased demand. If population ceases to advance before this point is attained, the evil lies somewhere else. The proper remedy is not to check the demand, but to enlarge the supply. The inmates of an Irish hovel may die by actual famine, or by any one of the thousand diseases consequent on wants imperfectly supplied; but while Ireland continues to export many articles of food, the evil must be attributed, not to the insufficiency of the Creator's bounty, but to the failure of human efforts to second His beneficent designs. The cause is artificial and remediable. The stores of Nature are not consumed, but they are unequally distributed. The legislature may find it difficult to effect a more equal division of the means of subsistence without infringing the right of property, and causing evils a thousand-fold greater than any which result from the present constitution of things. Still the remedy is possible, and the check upon population is unnecessary. In this country, we are accustomed to believe that many of the particular provisions of English law tend needlessly to favor and increase this inequality of private fortunes. For instances, we need only allude to the constitution of the Irish Protestant church, the tithe system, and the peculiar modes of taxation, which favor *absenteeism* among the great landed proprietors. A comparison of our own institutions with those of England, displaying the effect of each on the distribution of wealth, on the accumulation and perpetuity of overgrown private fortunes, would form an interesting chapter in an American treatise on Economical science.

The system of Malthus was originally proposed to refute those dreams of human perfectibility which Godwin advanced in his treatise on Political Justice. Could the moral and intellectual character of the race be changed, Malthus argued, — could equality of property be maintained without destroying the incitements to toil, and the rules of natural morality and jus-

tice be universally enforced without the sanction of law or the dread of punishment,—in a word, could man become a perfectly wise and virtuous being, the fecundity of the species would still prove an insurmountable obstacle to the indefinite growth and continuance of happiness. As all the checks on population existing at present would be done away, the race must multiply till the crowded earth could receive no more; contests for place must then ensue, occasioning a new class of evils, that would carry man back to his state of original imperfection. We cannot get rid of the difficulty respecting the origin of evil by showing that sin and misery are remediable, and continue only by our own fault. In a greater or less degree, they form part of the necessary constitution of things. At present, however, such speculations respecting the tendency of population are wholly inapplicable. In the most civilized countries, the advancement of the race has stopped at a point far short of that which it is capable of attaining. We are practically concerned only with a class of evils, the remedies for which are within our reach, and can be attained without any necessary diminution in the numbers of mankind.

The question respecting the unlimited accumulation of capital, and its probable effects, admits of a similar solution. The natural desire for enjoyments is always sufficient to exhaust the productive power of machines and human agency united, whenever a virtual equality of means removes all check upon the demand, except the satiety that results from continued gratification. But the inordinate aggregation of capital in the hands of a few limits from necessity the requirements of the larger class; while the luxurious imagination of a Sybarite cannot so enlarge the demands of the smaller number as to make up the deficiency. Confining our attention to dress, for instance, if ninety-nine out of a hundred are compelled to use only the coarsest and cheapest stuffs, a small portion of their productive agency will suffice to clothe themselves; the surplus of industry can be employed only in devising and executing very costly fabrics to gratify the tasteful and capricious inclinations of the fortunate individual. So it is with articles of food, and with all the appurtenances of household luxury and comfort. The wealthy must expend in wanton gratifications what is

saved from the forced privations of the poor, or the demand will stop short of the means of supply. Equalize to a greater extent the distribution of wealth, and the retrenchment of unnecessary expenses on the part of the few is far more than compensated by the enlargement of expenditures by the multitude. If each of a hundred individuals wears broadcloth of a moderate fineness, more industry will be employed in manufacture than if ninety-nine used only the coarsest serge, and the hundredth paraded his delicate person in silks and satins. Of course, we advocate no Agrarian scheme of distribution, the impolicy of which, in an Economical point of view, is demonstrable on the simplest principles of the science. The grand problem which the legislator has to solve is to diffuse wealth as equally as possible through the community, without infringing in the slightest degree the right of property. The consequence of such infringement must be, not equality of distribution, but universal impoverishment. We contend that many European institutions favor the inordinate and unnecessary aggregation of capital in a few hands, and perpetuate the social evils which their political theorists seek in vain to remedy, because they wilfully shut their eyes to the only real cause. We refer particularly to the right of primogeniture and the laws of entail, which are as pernicious in their Economical effects as they are absurd in morals.

They operate as a clog upon industry, because they remove the most powerful of all incitements to toil,—the hope of improving one's condition in life. Where they exist, the barriers between the several classes in society are so lofty that, though a passage downwards in the ranks is always possible, nothing but the most extraordinary conjuncture of circumstances can ever enable a common laborer to pass up to a higher grade. To maintain his position, to secure a bare subsistence for himself and family, is the only object which he can reasonably keep in view; and he will ordinarily confine his labors to that end. If he can earn in four days what will maintain him through the week, he will be idle the other three. But place before him the hope, founded on the constant fluctuations of wealth that are going on around him, of securing a more elevated position, and the task imposed by necessity is changed

into a labor of love. Nature has made ample provision for this effect. Wealth is never stationary, where her laws are not perverted by human institutions. The property of a father is distributed among his children, and subdivided to an indefinite extent by descendants in the third degree. The industry and providence of a family in one generation are counteracted by the folly and spendthriftness of the next. This is the equality established by Nature, in contradistinction from that maintained by theorists, — an equality not of actual provision, but of opportunities. The right of primogeniture and laws of entail destroy this beneficial arrangement, by removing one class in society from the operation of fear, and depriving the other and larger portion of hope.

DUALISM, MATERIALISM, OR IDEALISM.

FROM THE PRINCETON REVIEW FOR MARCH, 1878.

IN a living human body, viewed objectively, there are manifested two distinct classes of phenomena, which are recognized in every language as perfectly distinguishable from each other, being in fact so unlike that they have not a single feature in common. These are, first, merely *physical* appearances, all of which are reducible to modes of extension and motion, and which are witnessed or made known to us only through the corporeal organs of sense, chiefly through sight and touch. Secondly, there are the *psychical* phenomena of cognitive perception, feeling, and volition, which are not, in themselves or under their first and obvious aspect, modes either of extension or motion, which cannot be even imagined or conceived as such, and are not manifested through the senses, but are made known to us in the first instance solely through that internal power which we call consciousness. Because these two classes of phenomena are so unlike, — unlike both in their nature, and in the sources or agencies through which our knowledge of them is obtained, — the common opinion of mankind attributes them respectively to two entirely distinct substances or entities, called Body and Mind, or the conscious Self. The distinction between them is even so obvious, that it is recognized in every language; and the knowledge of it therefore precedes speculation, and is anterior to all science and philosophy; for language is the expression and record of the primitive observation and unprejudiced common-sense of mankind.

These two classes of phenomena are further distinguished as being external or internal to him who observes them. The former, the physical phenomena, are supposed to be *out of us*, and are known only through the motion which brings some

portion of the external matter in contact with our organs of sense. The latter, the psychical phenomena, are *within us*, and are cognized directly, without any apparent motion, and without the intervention of any corporeal organ of sense, by that indivisible being whom every one calls Himself. Again, because the physical phenomena are external, and are cognizable through the senses, each of them may be witnessed simultaneously by many independent observers; the whole audience of a speaker may behold his gestures and hear his uttered words. But the psychical phenomena, the action of that speaker's mind, cannot be observed by any person but himself. We who hear him know what he says, but we cannot, except through his report, know what he thinks. As Cardinal Manning says, "No one outside of us knows us as we know ourselves within. St. Paul asks, 'What man knoweth the things of man but the spirit of man that is in him?' " Still further, the physical change itself can become known only through a psychical attestation of it, the observer being distinct from the fact observed. But a psychical phenomenon, so to speak, witnesses itself by an act of consciousness, and thus supplies the only possible evidence of its own existence. Thus, the color of the sky, the fragrance of the rose, the heat of the fire, are nothing to me, and do not even exist, except as perceived by an act of my mind; but that act of mind is a conscious one, the knowledge that it exists being inseparable from the fact of its existence. All physical phenomena, moreover, because they are modes of extension and motion, consist of parts external to each other, *partes extra partes*, and so are complex and divisible without limit, an absolute unit either of space or time being inconceivable. But a state of consciousness, be it a perception, a feeling, or a volition, is properly indivisible, having no relation to space and no proper duration in time, being complete and fully determinable in character at the first and only moment of its being, what is called its "continuity" being only a succession of its repeated acts.

The distinguishing characteristics of the two classes of phenomena, so far as they have been thus analyzed, may be conveniently summed up in a tabular form.

PHYSICAL.

1. All are modes of extension and motion.
2. They can be observed only through the action of the senses.
3. They are external to the observer.
4. Each may be witnessed simultaneously by many observers.
5. What is physical can be known only through what is psychical.
6. The observer is distinct from the fact observed.
7. They consist of parts external to each other, and are therefore divisible without limit.

PSYCHICAL.

1. None of them can be conceived either as extended or as moving.
2. They are never cognizable by the senses, but are witnessed solely by consciousness.
3. They are internal to the observer.
4. They can be immediately known only by the one person who experiences them.
5. What is psychical is known *per se*, the phenomenon being its own attestation.
6. The act of observing and the fact observed are one and the same thing.
7. They have no distinction of parts, and so are indivisible.

Now the great question which we have to consider is, whether these two classes of phenomena are manifestations of *two* coexisting and perfectly distinguishable substances, entities, or things lying behind or beneath them, these two being designated respectively as Matter and Mind, or the thinking Self; or whether they are only two aspects of *one and the same* entity or substance. In other words, is man a *dual* being, composed of Body and Soul, these two acting, for a while at least, together and in concert, or is man really *one* in his inmost nature and being; this one, according to the Materialist, being only *relatively* one, a mere aggregate of various sorts of matter, a structure curiously put together of chemical atoms; or, according to the Idealist, being mind and mind only, and so absolutely simple and indivisible, what we call our Body being a mere shadow, form without substance, a mental picture existing solely in the mind and for the mind? Here issue is joined; this is the whole question, than which a graver and more pregnant one cannot be stated. Dualism, Materialism, or Idealism, — which will you adopt?

It is curious that the answer to this question depends very much on the person respecting whom it is asked. If you ask it respecting any other man than yourself, and confine your attention entirely to what *you* directly know of him, then you must accept the doctrine of Materialism. To you, any other

man appears as one body among other bodies, a mere aggregate of atoms, manifesting only physical characteristics. For all that you immediately know of him, he may be a mere automaton, like Maelzel's chess-player, making gestures and uttering sounds, indeed, though, apart from the purely conventional significance which you see fit to attach to them, those gestures and sounds have no more meaning than the flapping of a windmill's arms and sails, the notes sounded on a flute, or the screeches of a locomotive. Viewed from the outside, which is all that is accessible to sense, man is only a forked radish, with a head fantastically carved. Hence, Descartes, regarding animals only externally, concluded with perfect justice that they were mere machines, destitute of feeling, and therefore that there was no cruelty in beating them, or even in dissecting them while still apparently alive. Reasoning in like manner, another philosopher propounds this grave question: Suppose a skilful mechanic, as much excelling a Vaucanson or a Maelzel as either of these excelled a common carpenter, should construct a wooden figure perfectly resembling my footman, dressed in the same livery, and performing with equal adroitness every menial task that was required of him; should I be able to detect the cheat, and perceive that an automaton had been substituted for my servant? Certainly not, I answer; though perchance a doubt might sometimes occur, whether the mechanical, and therefore exact and unvarying, obedience rendered to my commands by this eidolon was not more than could be reasonably expected of any but a superhuman footman. I might suppose that he was *above*, but never that he was *below*, humanity.

On the other hand, whoever puts the question as referring exclusively to *himself*, must receive just the opposite answer. According to all the evidence which is *here* available, every man is to himself purely an ideal being, and all around him is ideal. Matter comes not near him, does not enter into his composition, does not even exist. As already stated, what is physical can be known only through what is psychical. You and all other men, my own body included, are mere impressions made upon my mind, mere pictures floating before my fancy. Sun, moon, and stars are nothing to me, except as

bodiless images reflected in the glass of my consciousness. Perhaps I dreamed of you last night, and as personages in that dream, you were certainly 'unreal or immaterial. Who will give me any valid assurance that I am not merely dreaming of you now? As Leibnitz said long ago, "It is only by what is within us, that we have any knowledge of what is outside." At the best, the existence of matter as such is only an inference; it is never known immediately and in itself, but we infer that it exists as the unknown cause of the sensations in our minds. All that we do know immediately, as distinct from our consciousness, is the presence of a resisting Force, a Power not ourselves, with which we come directly in contact when we strike hand or foot against what is outside; and this is enough to assure us that we live in a real world, peopled with beings like ourselves. But that this foreign agency, this resisting Force, comes from dead and inert particles of matter, is a mere figment of the imagination; it is a crude and baseless hypothesis. Hence there is a contradiction in assuming, as Kant does, that both external and internal presentations to consciousness have merely *phenomenal* truth, both in the same manner and to the same degree. For the phenomenal truth of what is physical presupposes the real truth of what is psychical, the former being known only through the latter; that is, if the psychical event were not a real and direct presentation to consciousness, the physical phenomena would not even appear. I may reasonably doubt whether the picture in my mind correctly represents an external reality; but I cannot doubt that this mental picture itself is an internal reality, for its presence is immediately attended by consciousness. To adopt a parallel case, the accused would not even *seem* to be guilty, if circumstances and witnesses did not *actually* testify against him. As Leibnitz remarks, "There may be intelligible reason for error in our mediate and external perceptions; but if our immediate internal experience could possibly deceive us, there could not be for us any truth of fact whatsoever."

This distinction between the immediate apprehension of reality, and the merely phenomenal presentation of it, becomes more important when we pass from qualities to the substance

or thing in which those qualities are supposed to inhere. The substance of Matter is not even phenomenally apprehended. It does not even *appear* to be. It lies hid behind an impenetrable veil. So far as our knowledge of it is concerned, Matter is only what is supposed to be contained in a husk or shell, which, as it can be looked at only from the outside, may be empty for all that we know. We cannot crack the nut, so as to ascertain whether it is full or void. All its qualities are manifested merely at its surface, and can never be known to be more than skin-deep. Of course, what we term *Body* can be indefinitely subdivided. But the atom is the ultimate element of matter, Body being merely an aggregate of atoms, each of which, as its name imports, is absolutely indivisible and absolutely hard. After all, the atom of the chemist is a mere conception of the mind ; it is too minute to be separately apprehended by the senses, and is properly thought only as form without substance. Hence it is but the ghost of matter, and that which is exclusively constituted from it by mere aggregation is equally unsubstantial.

On the other hand, the substance, here called the Subject, of psychical phenomena is manifested directly and in itself, through the same indivisible act of consciousness by which I apprehended its successive states or attributes. That sentient and thinking Subject, which every one calls "I," or Self, is an indispensable factor in every immediate presentation to consciousness. A sensation or thought is nothing to me except so far as I am conscious of it as *mine*, — that is, as the state or condition in which I exist for that moment. What I am directly conscious of is not an abstraction, such as a sound or a color, but the concrete fact, "I hear the sound," or "I see the color." Neither the sound nor the color exists, as a present reality, if it is not now perceived ; and it cannot be perceived, except I am conscious of Myself as perceiving it ; for there is no perception without a percipient, no action without an agent. As already remarked, I have not a phenomenal, but an immediate and intuitive, knowledge of the existence of the sensation ; and from what has now been stated, it necessarily follows that I have an immediate and intuitive knowledge of Myself as sentient, instead of having merely a phe-

nomenal cognition of that Self through its manifestations, or an indirect assurance of its reality by inference from other cognitions.

Still further; I not only know *that* it is, but also, to a considerable extent, I know *what* it is, — namely, that it is absolutely one and indivisible, and that it is identical with itself throughout its successive manifestations. I know it as absolutely one and the same being under all its variety of aspects, and in all the remembered stages of its existence. On each of these points, we have the distinct and irrefragable testimony of conscience as well as of consciousness. No one ever attempts to divide and parcel out his responsibility for any act, either as between different portions of Himself at the same time, or between a past and a present Self as distinct beings at different times. This, indeed, is the proper idea and significance of what we call Personality, that it is constituted by the unity, continuity, and identity of our conscious being. It is only by a figure of speech, and that a somewhat strained and unnatural one, that we ever speak of a former Self as contradistinguished in any way whatsoever, except as acting differently, from the Self now present to consciousness. Usually, when we compare one thing with another and find that they perfectly resemble each other, we *say* that they are not different, but the *same*; but what we *mean* is, that they are merely *similar*, not that they are numerically the same. Only in this figurative and limited sense do we say, for instance, that the speaker uses “the same” gesture, or utters “the same” word; of course, they are not numerically the same, each being the result of a second and distinct act of muscular exertion. But it is only by a metaphor that I speak of comparing my former with my present Self. There is really no comparison in this case, since what are called *two* are immediately and intuitively perceived to be one and the same, numerically the same, though present at two separate times. It is a necessary and intuitive recognition of oneness of substance, — of the absolute identity of the agent in two distinct acts. That the child is father of the man, is but half the truth; so far as memory extends, the child *is* the man, with a common consciousness and an indivisible responsibility. Call up any dis-

tinctly remembered act of your childhood, perchance a repented one of wilfulness, petulance, or sin, and try to convince yourself that you are not the same being who did it, but that it was the act of another Self; or even that you are only in part the same, and in part different. You cannot do it. The intervening years have indeed enlarged your knowledge, altered your habits, and increased your powers; but the piercing eye of consciousness reveals instinctively and at once, under these phenomenal changes, the unbroken continuity and identity of your inmost being, your real Self.

With this persistent unity and sameness of the thinking mind, contrast the incessant mutations of what appears as our corporeal organism. Physiology has proved beyond all question, that my body is kept up only through a constant process of flux and renovation. Throughout every portion of it, waste and repair, excretion and accretion, balance each other, so that every tissue is, so to speak, an embodiment of change. We cannot descend twice into the same river; no two days together do we inhabit the same body. It is true that our mental life also *seems* to survive only through a similar incessant change of its states of consciousness. But in both cases, the mutation is witnessed and measured, so to speak, by what is immutable; just as the flow of a quiet stream can be detected and estimated only by its drifting past a rock or some immovable object on its banks. The conscious Self, one and the same throughout its whole remembered history, is that which beholds all change, and without which any change would be imperceptible, but which, in itself, is as immutable as any star in the evening sky. A river of thought is perpetually flowing through our minds; but it is only the *objects* which thus flit past, like rapidly shifting images in a mirror, while the thinking *subject* is the steadfast eye which beholds them come and go. Vainly do we strive to arrest what in its very nature and essence is so fugitive. What we call the same problem, indeed, the same knotty subject of reflection, may steadily be kept in view through long hours of anxious pondering and research; but it is really not the same for any two successive moments. According to the common phrase, we are turning it over in our minds, so that it is perpetually

appearing under a novel aspect, and in altered relations to the fresh collateral topics which are ever clustering around it and dividing our attention. So we may hunt the same game during successive hours or days; but the chase constantly hurries us onward into regions hitherto unexplored, fresh scenes and incidents rising around us at every moment. The huntsman is the same all the while, the various scenes of the landscape through which he rides being all successively photographed and compared with each other in his indivisible consciousness.

The essential oneness and identity of the thinking Self are necessarily involved and presupposed in the exercise of every function of thought. The mind could not do its work, if it were merely a shifting aggregate of distinct parts; it could not reduce plurality to unity; to adopt the phraseology of Kant, it could not grasp together the manifold of intuition into the unity of apprehension, if the artificial and virtual unit thus formed were not a mere reflection of the absolute simplicity and unchangeableness of the thinking Subject. Logic teaches us, that the intellect is necessarily a unifying faculty. The process of cognition is always a synthesis — a putting together of many into one, through comparing the elements with each other and discerning their mutual relations; and this is possible only because the understanding is one and the same in every portion of its work. Even the simplest act of perception is a construction of the plurality of parts and attributes of the perceived object into one whole, whereby we recognize it as coming under a previously formed concept, and therefore as designated by a name common to it with other individuals of the same class. But if the mind is itself a manifold without unity, either a mere bundle of sensations or a series of isolated thoughts, it cannot unite the *disjecta membra* of experience into an object of cognition, and thus knowledge itself becomes impossible.

Let me illustrate the necessity of this oneness of the thinking principle a little farther. Even the semblance of duality must be excluded. Thus, a congenitally blind person and another who is congenitally deaf, merely because they are two distinct individuals, though their bodies should be as closely

united as were those of the Siamese twins, cannot, by combining their information, come to know that a color is different from a sound. Then my knowledge that these two distinct phenomena of sight and hearing are radically unlike each other must be due to the fact that I am one and the same person who perceives them both. Any two objects or two sensations, in order that they may be compared with each other, must be united in a common consciousness; and that is impossible, except on the supposition of the absolute unity of that consciousness. Hence, I can never be sure that an orange raises in your mind the same sensation of color that it does in mine; for though we agree to call it by the same name, the word *yellow* designates in either case only the peculiar sensation which each of us receives from the orange. In order to be sure that *your* sensation so designated perfectly resembles *mine*, I must not only get inside your skull and look out through your eyes, but I must be melted and absorbed into your self-consciousness; we must cease to be two and become one.

Both the doctrine and the argument here are far from new, but were clearly and forcibly presented by Plato in the "Theætetus," and again by Aristotle, from whom they were adopted by Descartes, though the physiologists of our own day seem to have lost sight of them altogether. I borrow in part Professor Archer Butler's exposition of the reasoning of Aristotle upon this point. There must be, he argues, one receptacle — a common and higher sense, which brings together the special perceptions of the several distinct senses, so as to harmonize them into one system of knowledge through discerning their mutual relations: τῶν ἰδίων αἰσθητηρίων ἓν τι κοινόν ἐστὶν αἰσθητήριον, εἰς δὲ τὰς κατ' ἐνέργειαν αἰσθήσεις ἀναγκαῖον ἀπαντᾶν. "The differences of things sensible must be apprehended by sense. Yet this detector of differences cannot be any peculiar or special sense among the five external ones, for each can but perceive its own object, and none can compare with the rest; οὔτε κχωρισμένοις ἐνδέχεται κρίνειν. It can no more be effected by distinct *senses*, than by distinct *persons*. There must then be some single faculty of sensation, the common judge of all. Nor, again, can the objects be presented to the sense in different *times*, any more than by different organs, if a single indivisible judgment

is to be pronounced ; the two objects must be included in the one instantaneous judgment. Only if A and B are both simultaneously present to consciousness, can I judge that A *is* B. Hence, there must exist some common centre of sensation, in which all the sensations of all the senses are received and compared."

Take now the confident assertions of the Materialists, and see how incompetent they are to grasp the fundamental conditions of the problem which they undertake to solve. "By the study of physiology," says Dr. Maudsley, "it has been placed beyond doubt," [observe the magisterial dogmatism of affirmation, *it has been placed beyond doubt,*] "that the nerve-cells, which exist in countless numbers—about six hundred millions in number, according to Meynert's calculations—in the gray matter spread over the surface of the hemispheres, *are the nervous centres of ideas.*" It is satisfactory to know that we have so large a number of ideas on hand for the furtherance of our intellectual labors, though it is somewhat remarkable that the brain of any clown, having the ordinary amount of gray matter covering it, is about as richly furnished with them as that of a Newton or a Leibnitz. With equally unfaltering assurance, Dr. Maudsley proceeds to inform us, that the cerebral hemispheres "are superadded in man and the higher animals *for the further fashioning of sensory impressions into ideas or conceptions.*" But each sensation is particular and individual, representing only the one object or quality by which it is imprinted on the sense; while the idea or concept is general, standing for a whole class of objects or attributes, to each of which it bears a definite relation. Remembered experience of an indefinite number of particular things belonging to this class is therefore needed to constitute the idea; and how is such experience possible, how can many memories be garnered up in one thought, except through the unifying action of one thinking principle which originally witnessed them all? Memory is possible only on the supposition of the continuous identity of him who remembers. My testimony as an eye-witness of what took place yesterday or a week ago is admissible only on the ground that I am still the same being who beheld the occurrence. In like manner, the presence of countless ideas in

my brain, each enshrined in its own nerve-cell, would avail me nothing, except so far as every one of them is distinctly recognized as *mine*, or as the phase for the moment of my indivisible consciousness. I must exert a coördinating power over them, discerning their relations to each other, separating and combining them, and thus elaborating them into distinct trains of thought and orderly systems of knowledge. Otherwise, the presence in my brain of a crude mass of details mechanically imprinted at haphazard on the gray matter there, and each isolated on its own nerve-centre, would generate only confusion, and leave me just as helpless and impotent as if my mind were a blank.

One is not surprised, then, to find Dr. Maudsley, on the very next page of his book, frankly admitting that his whole theory is a blank hypothesis, without a shred of evidence in its favor. "So exquisitely delicate," he says, "are the organic processes of mental development which take place in the nerve-centres of the cortical layers, that they are certainly, so far as our present means of investigation reach, quite impenetrable to the senses; the mysteries of their secret operations cannot be unravelled; they are like *nebulae* which no telescope can yet resolve. Nor will it be thought reasonable to ask such knowledge, when we reflect that we have not yet the means of knowing the properties and structure of the molecule of any liquid or solid — what are its internal motions and what are the parts and shape of it." Then the senses, even when aided by the highest powers of the microscope, tell us nothing about what is taking place within any one of the six hundred millions of the nerve cells. *They* do not enable us to see the ideas therein contained; and even if the ideas were like colored bits of glass, perceptible by sense, (which they certainly are not,) there would still be needed an eye, *one* common power of vision, to behold them there. Consciousness, pure and simple, the only other organ of knowledge which we possess, surely does not teach us anything whatever about the physical constitution of the brain. The ideas themselves tell us nothing about their local habitation within the skull. But if neither the senses nor consciousness, our sole means of information, give us any testimony on the subject, how comes it to be—"placed beyond

doubt" that, within the gray matter of the brain, are found "the nervous centres of *ideas*" as distinguished from *sensations*, and that the cerebral hemispheres in man and the higher animals are organized for the very purpose of "fashioning sensory impressions into ideas or conceptions" ?

One of the highest authorities in physiology, Prof. Huxley, though he has a strong bias towards materialism, frankly admits, that "there is no satisfactory proof at present that the manifestation of any particular kind of mental faculty is specially allotted to, or connected with, the activity of any particular region of the cerebral hemispheres."

We understand what is said to us only on condition of remembering the earlier uttered half of the sentence, while we are hearing the later half. Even if each of these halves has its separate locality, the indivisible coördinating mind must still bring them together and apprehend them as a unit, before the meaning of the sentence as a whole becomes intelligible ; otherwise, each half might as well be whispered separately, under strict injunctions of secrecy, to the two Siamese twins.

In the seventeenth century, the favorite hypothesis for explaining the intercourse of mind with body was that of "*the animal spirits*," — fluids far more subtle than the lightest gas, which permeate the brain and swiftly traverse the conduits of the nerves, and thereby harmonize and transmit the activities of the intellect and the will. Then Dr. Hartley set forth his doctrine of *the vibrations and vibratiuncles* of the substance of the nerves, which appears still to be the favorite theory of the German materialists. Somewhat later, *electricity* travelling along the nerves, and stimulating the action of the brain, became the *deus ex machinâ*, the motive-power of the machine, and is still frequently appealed to as explanatory of psychical processes. Then Mr. Herbert Spencer applies to *chemical affinities* for an explanation of the problem, and conceives mental processes as repeated acts of resolving and reconstituting molecules in a condition of unstable equilibrium. "Nerve-centres disintegrated by action," he says, "are perpetually reintegrating themselves, and again becoming fit for action ;" and hence with unhesitating assurance, though without a particle of evidence, he announces his foreordained conclusion, "we have

good reason to conclude that, at the particular place in a superior nervous centre, where, in some mysterious way, an objective change or nervous action *causes* a subjective change or feeling, there exists a quantitative equivalence between the two." *Quantitative* equivalence indeed! But then whence comes the difference *in quality* between one thought and another; between the inspired creations of genius and the platitudes of a clown? Since the chemical see-saw of setting up nerve-molecules in the brain, and knocking them down again, is essentially and forever the same, like atoms always forming like compounds, it ought to produce precisely the same result in a grave-digger's skull as in a Hamlet's. In fact, why should not one and the same thought be reiterated forever, since two atoms of hydrogen with one of oxygen never yield anything but pure water? A later authority than Mr. Spencer discourses about "*the peculiar discharge of undulatory motion* between cerebral ganglia, that *uniformly* accompanies a feeling or state of consciousness." But no microscope ever disclosed any undulatory movement whatever in the brain; and the doctrine of the concomitance of any such action with the processes of abstract thought is as purely fanciful as the Cartesian hypothesis of the circulation of "the animal spirits."

All conjectures of this sort are crude, unmeaning, and unscientific. They contradict each other, they are entirely devoid of evidence, and they throw no light whatever upon the problem in hand, which is the nature of the connection between the body and the mind. Of course, such a connection exists, for man is a thinking animal, that is, a dual being; and this connection takes place through the nervous system, by means of which impressions on the senses and volitions are transmitted between the outer surface and the consciousness. But dissection of the nervous system can never discover the particular point in it which is the presence-chamber of the thinking-Self, such as Descartes thought he found in the pineal gland; for as Mind is not a mode either of extension or motion, it has no relation to place; and consciousness tells us that it is, in fact, ubiquitous to the whole nervous organism. It *is* wherever it acts and feels; for it is a contradiction that anything should act where it is not — that is, should get outside of itself, or

jump out of its own skin. Such action would be like that ascribed to Baron Münchhausen, who lifted himself out of the river by his own pigtail — that is, he got out of himself. Now, as long as the connection of the parts with each other remains inviolate, I do unquestionably act and feel throughout every ganglion and fibre of my whole nervous system, usually with consciousness, though sometimes unconsciously. Then I am actually present, *in propria persona*, in the tips of my fingers, wherewith I feel my pen, and write this sentence; in the nervous papillæ which line my mouth, wherewith I taste, but not wherewith my tongue and palate taste — for *they* are material and insentient, sensation proper being surely the prerogative of mind alone. Sensation is not double; my palate does not first taste, and then, afterwards and as a consequence, I taste; but I taste through my palate. Such is the testimony of consciousness, surely. In like manner, I am present in the retina of my organ of vision, where I behold colors, and not where my eyeball beholds them, for *that* is in front of the retina and distinct from it, so that it is merely my organ or telescope.

Moreover, this omnipresence of the thinking Self to its whole nervous organism is not effected through diffusion, or by partition and separate allotment, one portion of it being here and another portion there. But because it is absolutely one and indivisible, it is all in every part; it spreads undivided, operates unspent. Thus it is that the relation of the human Soul to the limited theatre of its own activities typifies the relation of the Infinite One to the universe. Each fills with an undivided presence the whole sphere of its being: "Whither shall I go from thy spirit? or whither shall I flee from thy presence? If I ascend up into heaven, thou art there; if I make my bed in hell, behold, thou art there. If I take the wings of the morning, and dwell in the uttermost parts of the sea; even there shall thy hand lead me, and thy right hand shall hold me." What is meant by the distinction of our several faculties is but a verbal difference, — is a mere convenience for classifying the successive or simultaneous acts of one and the same being. It is not my intellect which thinks, but I think. It is not my will which energizes, but I act; and I am solely responsible for the whole act throughout all time.

It is not my nerves which are sentient, but I feel through them, and compel them, as my ministers, to do my bidding. It is not the eye that sees, or the ear that hears, but one indivisible spirit, Myself, which is percipient through these organs, and sums up its own various activities in one act of cognition, and its successive states of consciousness in one remembrance. A vibration of the nerve, as well as of the air or the ether, may precede the audible or visual sensation; but the vibration *is* not the sensation, for it does not, like that, rise into consciousness. The vibration is a phase or mode of motion and extension, being inconceivable without both; but a state of consciousness obstinately refuses to include either. What is the shape, or size, or velocity of love or hate, of bitterness or sourness, of anxiety or benevolence, or abstract thought? We see at once that the question is meaningless and absurd.

This doctrine has been illustrated, with his usual wit and eloquence, by Mr. Ruskin. "It is quite true," he says, "that the tympanum of the ear vibrates under sound, and that the surface of the water in a ditch vibrates, too: but the ditch hears nothing for all that; and my hearing is still to me as blessed a mystery as ever, and the interval between the ditch and me quite as great. If the trembling sound in my ears was once of the marriage-bell which began my happiness, and is now of the passing bell which ends it, the difference between these two sounds to me cannot be counted by the number of concussions. There have been some curious speculations lately, as to the conveyance of mental consciousness by 'brain-waves.' What does it matter how it is conveyed? The consciousness itself is not a wave. It may be accompanied here or there by any quantity of quivers and shakes, up or down, of anything you can find in the universe that is shakable; what is that to me? My friend is dead, and my — according to modern views — vibratory sorrow is not one whit less, or less mysterious to me, than my old quiet one." Even if we grant the concomitance of the two phenomena, the question still remains, which is cause and which is effect. What better right have you to say, that the vibration produced the sorrow, than I have to affirm, that the consciousness of sorrow caused

the vibration? Surely, it is not the suffusion of blood into the cheeks and neck, which rouses in my mind the feeling of shame, but it is the consciousness of shame which calls up the blush. Wherein, then, can observation of the physical phenomenon throw any light on the nature of the psychical state which precedes it?

All these attempts to imagine some refined and subtile processes of mechanism or chemistry taking place within the skull, wherewith to bridge over the abyss between matter and thought, to make matter seem more spiritual and thought more gross, just as we try to approximate black to white by running through all the shades of gray, are but labor thrown away. You cannot fill up by intermediate steps the boundless interval between a molecule and an idea; you cannot transmute joys and anxieties into fluids, or judgment and invention into the swing of a pendulum; for they are not *in eodem genere*. Maudsley's attempt to pack distinct ideas into separate nerve-cells, and then to call them into more vivid activity by pulling some nerve-fibre like a string, is akin only to the folly of a child, who stuffs its doll with sawdust, and "makes-believe" that it is hushing a live baby to sleep. The mere concomitance of a mental act with a physical change proves nothing, and throws no light on the subject; for there are many processes going on simultaneously all the time in the brain — such as the circulation of the blood, the wear and replacement of tissues, chemical changes, the jar of atoms — any one of which is just as invariably concomitant as any other with the processes of pure thought. As the heart and the arteries are constantly pumping a rush of blood into and through my brain, and pumping it out again, why not identify that circulation with the ever-flowing river of thought, by the side of which my consciousness watches and waits? Why not, indeed, save for the reason that a blood-corpuscle no more resembles an idea, than the sound of a trumpet is like the color blue or scarlet? The two things are utterly disparate — so hopelessly unlike, that to mention them in the same breath is an absurdity.

Let us turn, then, to another mechanical hypothesis, which is a very old one, though it has recently been revived and

adorned with the fine fancy and abundant physiological knowledge of Dr. O. W. Holmes; to the supposition "that memory is a material record; that the brain is scarred and seamed with infinitesimal hieroglyphics, as the features are engraved with the traces of thought and passion." But wherein am I any the better off from having an image, say of the battle of Gettysburg, stamped on my brain, than from having one engraved and hung up on the wall of my study? In either case, the picture becomes significant only so far as it is beheld by an eye which looks at it, and by an indivisible thinking Self which contemplates its parts in their due relations to each other, and the whole in its relations to the foregoing and the subsequent history of my country. There is no bodily eye, no corporeal organ of vision, inside of the skull, to behold the picture there written or stamped on the surface of the brain; and it is only by apprehending these relations of the depicted event to the past and the future, that it really becomes known. And surely these *relations*, as they cannot be either perceived by sense or represented by imagination, as they have no shape, or color, or any other sensible quality, can be apprehended only by pure abstract thought, without the intervention of any mechanical or chemical process whatsoever. That was not properly the field of Gettysburg which could be beheld by the eye of a horse or a dog, just as well as by that of a man. As regarded by a student of the world's history, the great determining fight between the North and the South was something which could neither be depicted on canvas, nor imprinted on the pulpy surface of the brain.

The remark is as old as Aristotle, that each of the five senses is only a modification of the sense of touch. Now the merely physical result of this touch or impact must be always the same; it is only a jar of atoms, whether made on one nerve or another. But the percipient mind differentiates these separate concussions easily enough, and thereby acquires the varied material, the distinct data, of knowledge. Touch or agitate my optic nerve, and I see; touch my auditory nerve, and I hear; touch my olfactory nerve, and I smell. Between the mere jar of atoms, which, in either of these cases, is the only physical consequent of the touch, and the mental sensation

which is simultaneous with it, there is as wide a difference as between an image in a mirror and one who sees that image. Because all physical phenomena are modes exclusively of extension and motion, all the differences by which they are distinguishable from each other can be expressed in terms of mere *quantity*. It is all a question of more or less. Any one phenomenon has more or less extension than another, more or less velocity, more or less permanence, has more or fewer parts, and so forth. But in the world of sensations and ideas, far the most numerous and important distinctions are those of *quality*. In looking at the same landscape, the poet and the painter may not actually *see* more than the clown; but they have a keener discernment, a nicer sense of what is fitting or beautiful, a fuller appreciation of harmony, a more lively perception of analogies, a richer store of associated ideas. And when we pass into the realm of pure imagination and abstract thought, this distinction between persons becomes world-wide. The man of genius does not necessarily think faster than other people; he may not have more ideas in a given time. But he has better ones. His thoughts instruct and improve the world, form the minds of coming generations, and change the course of history. As merely the inside aspect of physical changes in the brain, as the mechanical or chemical action of the molecules of nervous substance, I cannot even imagine any difference between the work of an accountant summing up columns of figures, and that of a Newton or a Laplace, — between the poetry of Martin F. Tupper and that of John Milton. And if we compare men only with their peers, the differences between them, resulting from their respective idiosyncrasies, are still countless and obvious, and inexplicable on any hypothesis of the Materialist.

One of the most eminent physicists in England, Prof. P. G. Tait, remarks: "To say that even the very lowest form of life, not to speak of its higher forms, still less of volition and consciousness, can be fully *explained* on physical principles alone — that is, by the mere relative motions and interactions of portions of inanimate matter, however refined and sublimated, — is simply unscientific. There is absolutely nothing known in physical science which can lend the slightest support to such an

idea." Compare this clear and forcible statement with the assertion already quoted from Dr. Maudsley, and "placed beyond doubt" by him and his whole school of physiological psychologists, and tell me which of the two *savans* is merely indulging in a midsummer-night's dream, and which presents only the simple and unvarnished fact.

In beginning a study of the connection between physical and psychical phenomena, men are naturally misled through their previous experience into setting up a false standard of reality and a false measure of certainty. We come to the inquiry with a strongly preconceived opinion that the only unquestionable reality is that of material objects, which can be touched, measured, and weighed; that speculative truths must always be referred to a standard of tangible facts; and that the only evidence which cannot be impeached is the testimony of the senses. This is because the exigencies of our compound life impose upon us unceasing labor, in order to provide for the mere physical wants of the body. We must be housed, clothed, and fed; through agencies which are in great part of a material nature, through incessant physical efforts, we must keep up our intercourse with our fellow-men and coöperate with them in common enterprises. Even when some of the means for these ends are psychical, as in the communication of feeling and thought, the practical results by which success is measured are generally physical. Hence we are deluded into thinking that Matter is the only real object, that mental phenomena are but unsubstantial counterfeits of what actually exists, and that the senses are the sole inlets of what is properly called knowledge. But these illusions only show that we bring with us to our higher meditations what Lord Bacon expressively calls "the rust and the tarnish of the furnace," the corrupting or blinding influence of the petty occupations of our daily lives. We are too much the slaves of our senses, and through them are too often engrossed with material things. I know of nothing more degrading or unphilosophical than such enslavement to flesh and sense.

Compare deliberately the two worlds in which we live, the one of Matter and the other of Mind, and say which presents the stronger evidence of reality, and which is more immediately

and certainly known. As already stated, what is physical is known only through what is psychical, and our immediate life and action never pass the bounds of our ideal world. Matter, at best, is apprehended only indirectly and by inference; it is never immediately presented to consciousness. It is only a supposition, the unknown cause of a known effect. We are conscious of the sensible impression, but not of the material object which is supposed to produce that impression. We hear the sounds, but we do not directly hear the bell or the cart rattling in the street; *that* is an acquired knowledge, dependent on foregoing experience. We see the light, but do not see the sun, for that is more than ninety millions of miles off. And the light, as distinct from the physical vibration, is only a secondary quality, — that is, it exists and is visible only within the limits of consciousness. The senses are perpetually leading us astray, if not through rendering false testimony, at least through enticing us to found erroneous conclusions upon that testimony. The first lesson which even physical science has to teach is, to distrust the immediate evidence of the senses, as too often they confound the apparent with the real, the near with the remote, the visible with the tangible phenomena. At best, they furnish only the crude data of knowledge; and it is only as tested and cross-examined by the intellect, that what they report can become a basis for science properly so called. I have already adverted to the fact that sensations are properly incommunicable and strictly peculiar to him who has them, so that we can never be sure that they are the same for different observers. Sometimes, as in the case of color-blindness, a discrepancy in their testimony can be demonstrated.

But the truths which are intuitively discerned by pure intellect acting *à priori*, and independently of the evidence of the senses, are necessarily recognized as valid, not only for him who now thinks them, but at all times and for all mankind. They are not derived from experience, but are absolute laws which govern all experience, and so are irreversible, even in thought. As Leibnitz expresses it, they are what God eternally thinks, and therefore cannot be abrogated even by Omnipotence. Created things, for the very reason that they were *created*, are contingent, and necessarily depend on the good-will and pleas-

ure of Him who made them. But the true and the good, including all the relations of pure ideas, are coeternal with the Infinite Mind whose perfections they express, and therefore lie outside of the region within which alone power is applicable. To suppose that they could be abrogated would be to suppose that the Deity should act contrary to his own nature — that is, that he should cease to be God. As I have elsewhere said, to ask if the Almighty could annihilate space, or stop the flight of time, or contradict the truths of pure mathematics, or reverse the obligations of the moral law, is to ask if God could annihilate Himself. Very marvellous is it that the human mind, limited and imperfect as it is in all other respects, should have been enabled thus to rise to an intuition of these immutable and transcendent truths; and pitiable must any attempt appear to resolve such intuition into a phenomenon of the outward sense, or to explain it as a physical consequence of the displacement of molecules.

We find ourselves born into a visible and tangible universe, too vast to have any definite limits assignable to it by the understanding; and we know that our own existence is relegated to a corner of it, which, in comparison with the whole, is almost too small to be appreciated. But actual being does not depend on magnitude; one thing is not more real than another because it is bigger than that other. Shall we make that huge aggregate of matter to be our type of reality, and regard our own thinking life in it as a mere phantom, an arbitrary fiction of thought? Or will not a profound philosophy rather hold the material universe to be the phantom, and the human mind to be the reality in whose imagination the outer world is conjured up? If taken in its full import, we must allow that this question does not admit of a positive answer; it presents a problem too deep to be sounded by a finite intellect. What the external universe is in its inmost being and essence, as a noumenon, or *per se*, apart from its manifestation to us, cannot be ascertained here; we may know hereafter. As already said, it is known only as a foreign Force — a Power not ourselves, operating upon our minds. What that Force is *per se*, in its true nature, and not merely as apprehended by sense and thought, God only knows. But thus much we may confidently

affirm, that the material universe, according to the vulgar conception of it, as a huge mass of inert and lifeless molecules, with all the sensible qualities commonly attributed to them, and supposed to exist independently of any mind whatever, is a mere fiction constructed by human thought. It is built up only in our imagination; and we can easily retrace the process through which it is put together out of few and thin filaments of absolute being.

What we call "Nature" is an aggregate of sensible objects coexisting in space, and of events occurring successively in time. To adopt Kant's phrase, we *construct* the visible landscape before us by placing the various objects in it side by side, externally to each other and to ourselves — spreading them out, as it were, over an extended canvas, thus forming a broad mental picture. And, in like manner, we *construct* a page of our daily experience, or of history, distributing the successive events in it along the line of time, which reaches indefinitely into the distant past and future. Now, what were these objects and events, what were the various mental impressions, as they were first communicated to us by the senses, before we first projected them out of ourselves into the objective forms of space and time? They were purely mental; they were mere groups of sensations bundled together in the mind, — arranged, indeed, by processes of the understanding in their due relations to each other, but not occupying space, not outside of each other as *partes extra partes*, but existing simultaneously, like the various notes constituting a harmony or a discord, without any relations to space and time, except those which we subsequently impose upon them. Like all psychical phenomena, when considered purely as such, they were *unspatial*, and, if regarded as an aggregate existing at any one moment, were also *untemporal*. Whence, then, did we derive the canvas — the forms — on and in which we afterwards arranged them? Whence came Space and Time thus to be the background of our picture? Not from the senses, surely; for *pure* Space and Time, not occupied either by objects or events, are, to our apprehension at least, mere blanks; they are nothingness. There is nothing in them for the senses to take hold of. They are mere subjective forms, not borrowed from Nature, but thought into it, or

imposed upon it, by the constitution of our minds. Yet we have an intuitive and ineradicable *belief* that they have also objective truth, apart from and beyond our mental apprehension of them; that they are not merely laws of thought, but also laws of things. Whence comes this irresistible conviction, which does not appear to be weakened, even though we think there is no direct evidence in its favor? Perhaps we may approximate an answer to this difficult question, by going back to a subject already briefly considered — the apparent ubiquity of the thinking Self to the whole nervous system.

The doctrine of Reid and Hamilton, that we have an *immediate* perception of the external world, is rejected by the Idealists on the ground so frequently urged by them, that we can never get beyond the limits of our own consciousness. Knowledge can no more go outside of itself, they say, than a man can jump out of his own skin. Admitted: but is it so certain where the limits of consciousness are to be found? If the mind is really present wherever it acts and feels, then all that is inside of the skin is also inside of consciousness. If the sphere of our spiritual activity, instead of being limited to an indivisible point in the brain, is coextensive with our whole nervous organism, then we do not need to go outside of ourselves in order to become *immediately* cognizant both of the extension and the impenetrability of our limbs and muscles. We can become directly conscious of the distinction between void and occupied space; that is, of the resistance which is offered by the several portions of our own embodiment in a material form. Space thus becomes not only a subjective postulate, but an objective revelation. It is apprehended both *à priori* and *à posteriori*; it is known both as a law of thought, and as a manifestation of that which is foreign to our thought — the Power which is not ourselves. If touched on two separate portions of my body, as on the shoulder and the hip, I recognize *immediately* the distinction between *here* and *there*; and the idea of space, hitherto undeveloped, then rises into distinct consciousness. In the effort which is needed in order to effect any muscular movement, as in lifting a weight, we become *immediately* conscious both of our own causal agency, and of the resistance to it which is produced by the inertia of matter. Both the

Ego and the non-Ego thus become directly known, each in its contrast with the other, and equally real with that other.

This theory is entirely consistent with what has been alleged respecting the absolute unity and indivisibility of the thinking Self. That which is inextended can, by change of place, describe extension, as the straight line is generated by the movement of a mathematical point. Pascal asks in his usual fervid manner, "Think you it is impossible that God should be infinite, and yet without parts? But I will show you a thing which is both infinite and indivisible: it is a point moving in all directions with an infinite swiftness; for it is in all places, and it is all in each place." The Materialists themselves, at the present day, are far from limiting the action of mind to a single indivisible point in the brain. They do not even confine it, as Descartes did, to a small portion of the brain — that is, to the pineal gland. But they diffuse it through the gray matter which covers the cerebral hemispheres — that is, through the cortical layer which forms the whole upper surface of the brain. Dr. Maudsley, as we have seen, thus distributes it among the six hundred millions of nerve-cells which constitute this layer, each particular cell, according to him, being the centre of its own particular idea. Why not carry the distribution a little farther, especially as the gray nervous matter in question is found not only covering the cerebral hemispheres, but all along the spinal cord, and in all the ganglia or lower nervous centres with which nearly the whole nervous system is studded? With these facts before us, I say it is as unscientific to limit the sphere of the mind's direct activity to the brain, as it was on the part of the old physiologists to make the heart the special seat of courage and magnanimity, and to place compassion in the bowels, and melancholy (black bile) in the liver. In fact, the whole theory is as vulgar as it is unphilosophical.

For we must remember that the mind even of the young child, as yet uninformed by science, and knowing nothing about the brain or the nervous system, is able distinctly and accurately to locate its sensations wherever they belong in the different portions of its body. It comes crying to its mother with the complaint that it has "got a pain" in its toe, or its finger, or its back, — that it has the stomach-ache, or the ear-ache, or

the head-ache. Since the pain, as a sensation, can be felt only by the mind, if the mind is located only in the brain, if it is strictly imprisoned in its presence-chamber there, who informed it of the distinct localities whence these painful feelings in its extremities proceed? The physiologist is ready with his answer, such as it is. He says that the nerve-fibres, thin threads of nervous matter, run from the brain and the spinal cord to every portion of the body, and that each one of them, like a telegraph-wire, brings to the mind in the cerebral hemispheres its separate report of what is going on at its peripheral extremity. But I maintain that this answer is wholly insufficient, since it leaves the difficulty to be solved just as great as ever. It is true that hundreds, if not thousands, of these nerve-fibres terminate at their upper ends in the brain. But how comes the mind of the three-year-old child, which has never left its prison-house in the skull, to be able instantly to select the right fibre out of the whole large bunch of them, and to say this one comes from the toe, that from the finger, that from the ear, that from the stomach, and so on? You know that when a new servant is first introduced into the kitchen of a large house, she needs to begin the training for her duties by becoming acquainted with the several bells which are hung there. She needs to learn, either by tracing out each bell-wire through its whole length, or by being informed by some one who has so traced them, that this one comes from the parlor, that from the dining-room, that from the front-door, etc. How does the young child's mind, if it never leaves its presence-chamber in the brain, come to "know the bells?" Von Hartmann points out a corresponding difficulty in the case of the motor nerves, through which we control the action of every joint and muscle in the body. Surrounded with an indefinite number of the upper ends of such nerves in the brain, how does the mind know which particular one to pull in order to crook the forefinger, which one will lift the foot, which one will bend the knee? In such case, we know the mind never hesitates, wavers, or mistakes. Instantly it pulls the right bell; instantly it refers the telegram to the right city or town whence it came. I say, the only conceivable manner of accounting for these

marvellous facts is the omnipresence of the thinking Self, one and indivisible as it is, to the whole nervous organism.

One class of Materialists, however, attempt to explain away this ubiquity of the mind to the body which it inhabits, by denying the indivisibility of that mind, — that is, by rejecting the unity of consciousness. They admit the presence and governing action of mind in the ganglia or lower nervous centres, but assert that it is a different mind from that which is dominant in the brain, though communication is kept up between them, and their action is thus rendered harmonious, by the connecting nervous fibres. Every body, like a bee-hive, is thus tenanted by a sort of republic of distinct though coöperating souls. The undivided worm or ant, they say, has apparently but one consciousness ; but when cut apart, it has two, since each moiety continues to live and to exercise its ordinary functions. Curiously enough, when an Australian ant is thus cut in two, the severed portions immediately declare war on each other and engage in a fierce conflict, the upper half fighting with its mandibles and the lower one with its sting. We have the corresponding fact, it is urged, in the case even of the mammalia, whenever one of them propagates its kind ; since what was apparently one consciousness before birth becomes two distinct consciousnesses after the physical connection between parent and offspring is severed. It is further alleged, that if the severed halves of two different polyps, each of which had a consciousness of its own, are brought together, they will unite and form but one animal and one consciousness.

But it is an unproved and improbable hypothesis, that the ant, polyp, or offspring still *in gremio matris*, has any consciousness at all. Those created things which are low down in the scale of being, whether vegetable or animal, exemplify what Professor Owen calls “ the law of vegetative or irrelative repetition,” as they have many organs performing the same function, and not united with each other for the performance of a higher function. A number of similar parts being repeated in each segment of the organism, the body can be divided, and the severed portions, each containing some of the organs essential to the whole, will continue to live separately, and even to

grow and develop other organs convenient for their independent life. In the Polypiaria, we find many compound plant-like animals aggregated together on a single calcareous axis or base. In the cases now in question, the section made by the knife did not cut one soul or animating principle into two, but only severed one corporeal integument which previously held together several distinct lives, which were really independent of each other before their division, each deriving its nutriment perhaps from that portion of the integument with which it was in immediate contact. So a single hive of bees may be separated by the swarming process into several distinct communities, each provided with its own queen and principle of unity. So what we call the single plant may be severed into as many plants as it has distinct buds or germs ; but not into more than there are buds. A shred may be taken, either of plant or polyp, so small that it contains no germ of distinct life ; and then the severed fragment dies, being only an incomplete and discarded portion of the organism. Science can never discover the particular time, whether before or after birth, when the sentient principle is first infused into the immature offspring. But so far as physiology is competent to observe the change, all life, even the human, is propagated by what may be called a process of fissiparous generation. The old physiological axiom still holds true, *omne vivum ex ovo* ; only the ovum is detached sometimes in an early and immature, sometimes in a later and ripened, stage. The young opossum is first severed when as yet it seems to be little more than a small lump of protoplasm ; the young of one of the higher animals remains in the womb till it is comparatively mature. The precise moment when distinct sentient and conscious life begins is one of the many mysteries before which Materialism throws down its microscope in despair.

THE IDEA OF CAUSE.

FROM THE PRINCETON REVIEW FOR MAY, 1879.

THE philosophy of Descartes has at least one great defect, that it does not explicate and bring out into distinct consciousness the idea of Cause. By making the essence of Matter to consist in passive and inert extension, and the essence of Mind in thought, which is supposed to have no capacity of going out beyond itself, so that it can act only within its own limited sphere, his theory leaves the outer world of activity and change in which we live without any explanation, except through the incessant action of its Creator. Some of his immediate followers and successors, among whom were Spinoza, Malebranche, and Leibnitz, partially remedied this defect. Yet neither of them completely removed it, because they did not grasp the whole significance of the word, or distinguish the various meanings and applications of which it is susceptible. Let us attempt to supply, at least in part, this deficiency; for among all the metaphysical "elements of knowledge," I know of none which is more essential to clearness of thought, more varied in its meaning and application, or more determinative, so to speak, of the whole character of our philosophy. Tell me what you know or believe about Causation, about the origin and nature of the idea, and its relations to Matter and Mind, and I will tell you whether you are Idealist or Materialist, Positivist or Transcendentalist, Fatalist or a believer in Free Will, Theist or Atheist.

As the first, and perhaps the most important, step towards a full exposition of the subject, we must go back to Aristotle, whose acute and comprehensive intellect supplied so many of the distinctions, and so large a portion of the terminology, of both ancient and modern philosophy. He pointed out four

distinct meanings of the word, or four different sorts of Causes, upon which the mind inevitably stumbles when it tries to ascertain the origin and nature of any phenomenon. These may be passed over here very briefly, as they have recently been discussed by President McCosh.

The word Cause was originally used in a very wide sense, corresponding to the Latin *causa*, Italian *cosa*, French *chose*; it meant *the thing* — more definitely in German, *Ursache*, the *primitive* thing — which is transacted, spoken, or contended about. The Greek term *αἰτία* merely adds that it is the thing which we accuse or assign as the origin of the phenomenon in question. Aristotle distinguished four kinds of such “primitive things” or Causes, which account for the existence of what we are inquiring about. The Material Cause is the original matter (German, *Urstoff*, primitive stuff) out of which a thing is made; the Formal Cause is the peculiar texture or internal constitution (*forma informans*, the essence) which makes any particular substance what it is, or gives to it its distinctive character; the Efficient Cause corresponds to our modern use of the word, as it signifies the maker or author of a thing, that which really produces it; while the Final Cause is the end or purpose, the intention, for which it was made. Thus, the Material Cause of the paper on which I am now writing is the pulp of rags out of which it was made; its Formal Cause is the peculiar texture given to it, which entitles it to be called *paper*, rather than linen or *papier maché*, which might be formed out of the same material; its Efficient Cause is the paper-maker; and its Final Cause is to be written upon.

To understand the first two of these designations we must go back to the old Aristotelic distinction between the Matter, ἡ ὕλη, and the Form, τὸ εἶδος. The primitive Matter or substance from which all things were constituted, because chaotic, homogeneous, and wholly indeterminate, is not regarded by Aristotle as actual, but only as potential, being. Because it is everything in general, it is as yet nothing in particular. It first becomes actual when it receives a definite “Substantial Form,” τὸ τί ἦν εἶναι, by virtue of which it becomes a distinctive or peculiar substance, of which this Form is the *essence*. Then first it acquires its special properties or attributes, which

are the manifestation of its essence. Thus, it is of the essence of iron to be metallic, magnetic, malleable, etc. So, also, sound is the Matter of speech, articulation is its Form. Protoplasm is the Matter from which the living organism is constituted; the cell or cellule, and the distinctive tissues evolved from it, is its Form. We thus come to a distinction which is vital in the Kantian philosophy. Intuitions or Percepts are the Matter of Knowledge, which the Forms of space, time, unity, cause, etc., first render thinkable or conceivable by the understanding. What the Germans call *der Inhalt*, the Content or Matter of the cognition, is first *thought*, when it receives its logical Form. Hegel conceives the Essence (here synonymous with Form) as that internal constitution of things of which their outward qualities are only the manifestation. Hence, when we propose to study the Essence, we regard the outward visible being, of which the senses directly take cognizance, as only the rind or veil behind which the Essence is concealed. Hence, again, all things have a sort of double being in thought, of which the outer one is merely apparent or inessential, while the inner one, the real being or Essence, is discerned only by reason.

The next pair of epithets applied to the word Cause, Immanent and Transeunt, which frequently recur in the writings of Spinoza and other pantheists, originated with the Schoolmen and logicians of the Middle Ages. The former, Immanent (from the Latin *in* and *maneo*, inbiding or indwelling), is conceived as in action only on and within the substance in which it exists, but as operating there continuously; while a Transeunt Cause is a living and conscious energy, going forth beyond that in which it inheres, and thus acting on other things *ab extra*, from without, though efficient only at intervals, on specific occasions. Thus, reflection, desire, attention, and grief are immanent properties of mind, affecting or determining the current of thought certainly, but producing no effect outside the consciousness of the thinking person; whereas the will, when brought into exercise as a distinct volition, goes out beyond the mind to the body, and moves the arms, opens the eyes, or shuts the fingers. Cohesion is an immanent property of a lump of matter, merely binding its particles together;

while the magnetic or electric force seems to transcend the limits of the substance wherein it is manifested, and to produce motion or change in what is external. We can now understand what Spinoza meant when he taught that "God is the Immanent, but not Transeunt, Cause of all things."

The distinction between these two is obviously the same with that pointed out by Aristotle between Formal and Efficient Cause. A Formal Cause is always Immanent; an Efficient Cause is always Transeunt. In the ordinary meaning of the word, the former is no Cause at all, since it does not produce any outer action or change at a particular time; but manifests only the permanent relation of the essence of a thing to its attributes. On the contrary, an Efficient Cause, properly defined by Aristotle as that, *ὅθεν ἡ ἀρχὴ τῆς κινήσεως*, which is the origin of movement, produces at a given moment a physical change in the outer world. Science teaches us, that all physical change is resolvable, in the last analysis, into the beginning or the cessation of molar or molecular motion, which requires space. Hence the German word to express the *origin* of any phenomenon is *Ursprung*, the primitive *spring* or movement. The Principle of Causality is, that *every physical change* — that is, every event in the material universe, every origination or cessation of motion — *must have a cause*. Hence the Principle is not applicable to objects that exist, if considered merely as existing, and not as changing; and much confusion and unsound reasoning have arisen from the attempt to extend it to them. I cannot infer, merely from the present existence of a stone or an animal, that it must have had a Cause; for all I know, it may have existed forever. But if we know that at some definite epoch it *began* to exist, then we say with absolute certainty, that that *beginning* of its existence, as an event, must have been produced by something foreign to itself; or, more loosely speaking, that the *event* must have had a Cause.

Hence, that primordial condition of the material universe, in which the evolutionist beholds "the promise and the potency" of all subsequent change and life, — whether it be, according to Democritus and Lucretius, an indefinite multitude of disconnected and homogeneous atoms, or, according to the

modern nebular hypothesis, a primitive fiery mist, — if not subjected to the action of an Efficient and Transeunt Cause exterior to itself, must have remained forever dead, motionless, and unchangeable. According to the hypothesis, the only Cause present to it must have been a Formal and Immanent — that is, an inherent or intrinsic — Cause; and the only result of such causation, as we have seen, is permanency of state, the eternal and changeless manifestation of the same attributes. It is not enough to say, what physical science has at last satisfactorily demonstrated, that there is no spontaneous generation of life; but we must add, what science long ago affirmed, that there is no such thing as the spontaneous generation of motion. As long as the universe was without form or definite structure, and also without an Efficient Cause, any *change* of its state was impossible. Before “the Spirit of God moved upon the face of the waters,” no winds agitated the surface of the “dark illimitable ocean,” no tides heaved its mass, no waves broke upon its silent shores.

Again, as the Principle of Efficient Cause concerns only the origination of movement or physical change, which requires space, it is not applicable to the phenomena of pure intellect, which are unspatial. Putting aside the sensations and feelings which are of a mixed character, as they arise from the connection of the mind with the body, it is evident that the succession of what may be called *pure* states of consciousness is regulated by inherent and spontaneous laws of thought and the association of ideas, and that these laws are wholly independent of physical causation. We have now passed into a new world, the contradictory opposite of the world of matter, since the two have not a single feature in common. I cannot properly ask for the *causes*, but only for the *reasons*, of my desires, my course of thought, my thick-coming fancies, my convictions, my volitions. In reverie and dreaming, in all conscious meditation that is not regulated or checked by the action of the senses — and such evidently constitutes the larger portion of our intellectual life — the river of thought windeth at its own sweet will. Passively I may wait and watch its ceaseless flow, or I may actively interfere and hem its current, or deflect it into a different channel. But the Reasons for such interfer-

ence, or for any other volition, are not *causative* in their nature; that is, they do not *necessarily determine* what particular Consequent shall follow, or even if there shall be any Consequent whatsoever. A variety of Reasons may be simultaneously present in consciousness, like so many suitors in court, each soliciting a verdict in his own favor to the exclusion of the others, because each has his own interests to subserve. The autocratic Will sits as supreme judge in that court, and is always more or less arbitrary in its decision. Generally, it is willing to hear argument, that is, to listen to the Reasons, and estimate their comparative weight and relevancy; though, like too many other judges, it is often wrong-headed and decides for the weaker party, even when conscious that the preponderance of reasoning and testimony is on the other side. Such is often the case when duty is pleading against temptation, though the culprit judge is fully aware, that if conscience had might, as it has right, it would govern the world. Common people often say of a judge thus acting, not that he is necessarily corrupt, but that he is blind and *wilful*, thus emphasizing that free and arbitrary character of the human will which is here in question.

As the strongest reason often cannot command volition, it frequently fails to produce assent. The relation between argument and volition, between the inferences of the understanding and the determination of belief, is far from being compulsory or certain. As Dr. Newman remarks, "Sometimes assent fails, while the reasons for it, and the inferential act which is the recognition of those reasons, are still present and in force. Our reasons may seem to us as strong as ever, yet they do not secure our assent." Hence, in sound logic, the *ratio cognoscendi* is clearly distinguished from the *causa fiendi* (*i. e.*, the Efficient and Transeunt Cause), though the two are arbitrarily confounded by Leibnitz in his Principle of the Sufficient Reason. The *causa fiendi*, as we have seen, is that which *makes* the event happen, and therefore never fails to be an Efficient Cause, though it may not be *sufficient* to produce the whole end in view; for it may be overridden by a more potent cause of the same nature. But as we are here in the kingdom of physical or mechanical necessity, the weaker cause in such a

case is merely overridden, but not extinguished, by its more powerful competitor; for the efficiency of the two is there compounded, as in the parallelogram of forces, and the resultant effect is unlike what it would have been if either had acted separately. But when different reasons, or motives, as they are commonly called, are competing for our assent or volition, though they may be almost equally balanced at the outset, so that choice between them may be long delayed in order to have time for consideration, yet when the decision is at last rendered, the conquered motive *is* extinguished or absolutely put aside, and the resultant action is precisely what it would have been if its motive had been the only one present to consciousness from the beginning. This fact alone, it seems to me, is demonstrative of the freedom of the will; and when united, as it always is, with the sense of responsibility for our conduct, the philosophical question is settled forever without appeal.

In truth, the word *ought* would cease to have any intelligible meaning, if my will were as necessarily determined by motives as a ship's course at sea is by the winds, so that conscience could no more reproach me than the ship for sailing in the wrong direction. The mind of an insane person has lost its rudder; he *is* necessitated; he *cannot* steer his course aright. Hence, though he becomes a homicide, we do not punish or even blame him; we only shut him up, so that he may do no farther harm. Mill, Huxley, and Spencer would have us believe that all the world are mad, and therefore that the tribunal which sends a convicted assassin to the gallows really commits murder. They virtually preach the innocence of wrongdoing, thereby rejecting the testimony both of conscience and consciousness, and bringing the highest interests of humanity into peril. Could they convince the ignorant multitude of the truth of their theory, this world would become a hell. But the unsophisticated common-sense of mankind rejects the dogma with disgust.

In order to defend and illustrate his doctrine of "continuous creation," which is only the theory of "immediate divine agency" carried out to its furthest logical consequences, Descartes revived the Scholastic distinction between a Cause

secundum esse and a Cause *secundum fieri*. An effect produced by the former of these holds good only so long as the cause continues to operate, but vanishes as soon as this ceases to act, for the effect has in itself no independent principle of being. *Cessante causa, cessat ipse effectus*. Such is the relation of light to the sun, and of the circulation of the blood to the beating of the heart. It is in this way, according to Descartes, that the universe, including even man himself, depends upon God; for this alone can properly be called creation. On the other hand, a *causa secundum fieri* expresses only the relation of the human artificer to the product of his labor, which he merely fashions, but does not create. An architect is needed to build the house, and a sculptor to shape the statue; but this task once completed, the workman may depart, and his work will remain.

Evidently, this distinction was first applied through a jealous concern for the theological dogma of the dependence of all things upon God. But the argument has a double edge, for the excellence of the work may seem to be impeached by maintaining that it cannot be made durable except through the constant care and aid of its author. Also, the doctrine comes perilously near to Spinozism. A Cause *secundum esse* seems at first to differ but little from the Formal and Immanent Cause of the pantheist, and continuous creation to be only another name for emanation. Yet the distinction between the two is really wide and important. In the Cartesian theory, the Deity is still outside of his work, operating upon it *ab extra*, and therefore continuously manifested as an Efficient Cause, and not merely as Immanent. Spinoza held that God, as the ultimate ground of all things, is the eternal, infinite, incessantly active physical Force, from which all being necessarily proceeds, just as from the very nature of a triangle it follows to all eternity that its three angles must be equal to two right angles. On this theory, indeed, all things do not properly *emanate from* God, but are rather *immanent in* Him. All physical objects and events are contained *in* His infinite extension, just as all thoughts and souls (for the Spinozan *soul* is only a succession of thoughts) are merely expressions or manifestations of His infinite and absolute thought. The Scholastic

and Cartesian doctrine of a Cause *secundum esse* and a continuous creation was probably suggested by the orthodox doctrine of the Trinity, according to which there is but one divine substance in the Godhead, and this one is manifested from all eternity in three equal and coeternal Persons. It is really an effort to conceive the inconceivable, by indicating typically what theologians call the eternal generation of the Son, and the eternal procession of the Holy Ghost from the Father and the Son, neither ever beginning to be, but both being constant and eternal manifestations of one God. Philosophy under Descartes thought to emancipate itself altogether from the influence of the Scholastic theology. But it did not entirely succeed in doing so; for it was long ago remarked, that it is not as easy to get rid of all one's beliefs as it is to burn one's house down. But there is a foundation of truth in the Cartesian doctrine, which commends itself as much to the heart as to the head of the Christian thinker. Descartes rightly represents creation, not as one act begun and ended at a definite time, but as a continuous putting forth of energy, a constant manifestation of divine power, so that, if it should cease for a moment, the universe would instantly lapse into the nothingness whence it was drawn. All things are, so to speak, *re-created* at every instant; for to suppose that anything could, of itself, continue in being after it was once created, would be to deny its finite and limited nature, and to render it for the time independent of its Creator. Compare this lofty and inspiring conception of the universe with the dreary mechanical theory of the infidel Atomist, who believes in a mud universe, built up and sustained solely by the forces immanent and inherent in that mud, self-shaped and self-evolved through an endless evolution of living forms, from the animalcule up to man, without any external power or agency whatsoever. For this is the upshot of the theory, try to sublimate it as you may. The atoms of Leucippus and Democritus, or the "primitive fiery mist" of the modern evolutionist, homogeneous and structureless throughout, are nothing but the primary constituents of mud; and those who behold in them "the promise and the potency of every form of life" are really idolaters bowing down before a Mud-Fetish.

The theory of immediate divine agency, as taught by Malebranche, involves the consideration of what are called Occasional Causes. These are only the uniformly attendant circumstances, which indicate the occasion or time when a particular event may be expected to happen, though not exerting any causative influence upon it whatsoever. In many instances, what is called the Occasional Cause is merely a concomitant effect of the same power or agency which really produces the event in question. Thus, the falling of the mercury in my thermometer below thirty-two degrees is the occasion which leads me to expect the freezing of water, though the thermometer certainly does not act upon the water, but is itself acted upon by the same power or force which produces the congelation. In other cases, the two phenomena may occur in immediate succession, though produced by agencies entirely independent of each other, the only connection between them being simultaneity of operation. In either case, the Occasional Cause is only a *ratio cognoscendi*, which leads me to expect what will soon happen from an independent and probably unknown cause.

In like manner, what is sometimes called an Instrumental Cause is, properly speaking, no Cause at all, as it is entirely passive, the action transmitted through it originating in some force or agency lying farther back. Thus, the force or active agency by which a stone is moved does not reside in the stick, or even in the hand, which pushes it, but in the conscious and intelligent Mind or Will, which thrusts the hand or stick with a preconceived and definite purpose and a conscious effort. The instrument through which the causal agency is transmitted may be one, or many. There may be a chain or series of intervening links between the primary application of efficient force, and the observed result of motion or change at the other end of the line. But each of these links is passive, because incapable of originating change either in itself or in that which follows. It merely transmits mechanically the initial impulse.

Lastly, we have the conception of Physical Cause or Law, which has become so prominent in the science of our own day. Here, by the admission of the physicists themselves, the rela-

tion contemplated is not that of Cause and Effect, but of Antecedent and Consequent. If the sequence, so far as observed, has been invariable, so that we look with perfect confidence for the subsequent phenomena to follow, then the invariable antecedent is called a Physical Cause, and the uniform conjunction of the two phenomena in time is styled a Law of Nature. Thus, friction is always followed by the evolution of heat, and if two drops of water or mercury are brought near each other, they invariably rush into one. Then friction is said to be a Physical Cause of heat, fire of the melting of wax, etc. ; and it is said to be a Law that the two phenomena should be thus conjoined. But no actual *nexus*, no real union of the two events, apart from this simultaneity of their occurrence, ever has been, or ever will be, discovered. No exertion of force or power can be detected by the senses ; we can observe nothing but the external phenomenon, the thing done, but never the power which does it. It was long ago remarked by Kant, that the senses can give us only a succession of isolated phenomena ; and that any synthesis of them, any grouping of them together by a real or fancied bond of connection, must be thought out by the imagination or the understanding. Sense presents the separate beads of perception in a series, only one at a time ; thought strings those beads together. An invariable antecedent is a sign or herald — an indispensable condition, if you will — of the phenomena which it precedes. So atmospheric air is an indispensable condition of human life, and space is an indispensable condition of motion. But no one imagines that the space generates the motion, or that air creates life. A constant antecedent, as that which leads the mind to expect a certain event, may be regarded as a *causa cognoscendi*, or as an Occasional Cause ; but it certainly is not the *causa fiendi*, or that which *makes* the event happen, whether we expect it or not.

A Law of Nature is only a general fact, or a statement comprising under it many individual facts. Then the statement of such a Law does not account for or explain the phenomena included under it ; it only describes them. The process of thought by which we pass from a Physical Law to an individual case happening under it is one of deduction, or logical inference. Because uniform experience has shown that *all bodies*

tend to fall towards the common centre of gravity, therefore *this body* thus tends to fall. The statement of the law, therefore, is that which *makes us expect* that the individual event will happen; and this, by a very natural confusion of thought, is often mistaken for the Cause which *makes the event happen*. But the relation in the former case is that between premises and conclusion; in the latter, between Cause and Effect. The former is a law of thought, the latter is a law of things.

The fallacy here exposed is one of much interest, as it lies at the bottom of every scheme of Materialism — of every attempt to account for the phenomena of the universe without bringing in any other agency than that of mere Physical Laws, or what it was once the fashion to call “Second Causes.” Such a theory is not only insufficient, or not supported by the requisite evidence; it is founded upon a mere confusion of thought, and is illogical and absurd. There is no such thing as the *agency* or *action* of a Law; except as a figure of speech, we might as well predicate locomotion of an idea, or speak of bilateral triangles. “Second Causes” are no causes at all, and exist only in thought. A Cause, in the proper sense of the word, that is, an Efficient Cause, as original and direct in its action, must be a *First Cause*; that through which its action is transmitted is not a Cause, but a portion of the Effect, since it does not act, but it is only acted upon. At most, it is only the Instrumental Cause. It is only the helve of the hatchet, with which he who was the actual Cause of the murder really struck the fatal blow.

Among the dozen different meanings of the word “Cause” which have now been mentioned and distinguished from each other, it is perfectly obvious, I think, that only one, variously denominated the Efficient or the Transeunt Cause, fully expresses the idea, and deserves the name; and that this idea, also, is the popular or vulgar notion, the ordinary significance of a very common word. Common people, — men, women, and children, — guided only by common-sense and the ordinary use of language, and not perverted by metaphysical or scientific theories, never attach any other meaning to the word, and find no difficulty in understanding it. The word, in this its distinctive meaning, exists in every language under the sun.

Savages, as well as civilized men, speak as familiarly of the "Cause" of any event, as they do of the "Time" when it happened; though the significance which they attach to either of these words cannot have been derived from the senses, but must have originated from consciousness of what is constantly passing in their minds. Hence, the knowledge of Efficient Cause strictly so-called precedes speculative inquiry, and is anterior to all science and philosophy; for language is the expression and record of the primitive observation and unprejudiced common-sense of mankind. Common people everywhere understand a "Cause" to be that which, of itself, or self-determined, produces any change in the external world, and without which any such change would be impossible. "Of itself, or self-determined," I say; for they always mean that which we now usually term a First Cause; that is, not one which is itself an effect of a preceding cause, but one which is primal and self-determined in its action — not merely producing the event, but arbitrarily or freely determining the particular time and particular place of its occurrence. They mean just what you and I mean when we say, for instance, that Wilkes Booth was the First and only Cause of the death of President Lincoln. The bullet and the pistol were merely his instruments or Second Causes, and therefore incapable of self-determination for use in this particular act at this particular time and place. We hold that Booth was the First, as well as the Efficient, Cause of the assassination, because we regard him as exclusively responsible for it, as he certainly would not be if he had been an unconscious and involuntary implement in the hands of another; that is, if he had been an automaton, or merely a Physical Cause.

This popular idea of Causation strictly accords with its philosophical or metaphysical meaning. It is what the physicist, even what the sceptic and the Positivist, have in mind when they assert, as they now do unanimously, that we can find no reality corresponding to it in the outward universe; that it is not, and cannot be, cognizable by the senses; and therefore that it is not a proper subject for physical investigation. Every change, every phenomenon which begins to exist at a definite time and place, must have an Efficient Cause; we can no

more deny this proposition than we can doubt the existence and unbroken continuity of *pure* Space and Time, though neither can be witnessed by the senses. But the nicest observation, the most refined analysis, nowhere discovers such a Cause in the external world. It can find there, at the utmost, nothing but invariable antecedence, a relation which differs from that of Cause and Effect as widely as the idea of person does from that of material substance. The result may be a humiliating one for the pride of human knowledge; but there is no doubt of its correctness. While all admit that a Cause is necessary for any physical change whatsoever, *the* Cause of any one such change has never been found in the material universe.

Efficient Causation is conceivable only as an exertion of force, and therefore must be regarded as *Transeunt*; that is, as operative on other things *ab extra*, and thereby producing change externally and beyond itself. And here is the chief reason why such causation is not only undiscoverable in the physical universe, but is even unthinkable as a property of any material substance. How can one body act on another, which is at a greater or less distance from it, without getting outside of itself? Certainly the senses cannot perceive any power or force emanating from the one and passing to the other, so as to form a bridge between them; and without such connection, their mutual action and reaction are inconceivable. How can the sun act on the earth which is over ninety millions of miles off? Or how can one particle of matter act on another particle without getting outside of itself, though the distance between them be made as small as possible? For even if the two particles are brought in contact, the one is still outside of the other and distinct from it; so that we still have the inexplicable phenomenon of *actio in distans*. This is the insoluble problem which is perpetually recurrent in metaphysics, besides influencing largely most of the theoretical physical science of our own day. When I throw a stone into the air, what is that which is communicated to it, by virtue of which it continues to fly after it has left the hand, in spite of the retarding action of gravity which soon brings it again to rest? Does the muscular force of my body extend for a considerable dis-

tance outside of that body, and thus sustain the stone in its flight? Motion is certainly communicated to the stone; but that is the effect produced, and not the cause. For what sustains the motion?

Leibnitz seems to have had the clearest conviction of the nature of this problem, and his mode of solving it is certainly an original one. He maintains that no one substance ever does act on another, but that each moves or rests independently, through the influence of its own immanent or inherent force, though it acts concurrently and in unison with every other Monad, in virtue of the harmony which was preëstablished between them from the beginning. The successive development of its own inherent properties goes on as prearranged, in strict conformity with physical law, *as if* it was constantly acted upon by every other Monad; though it would continue to act in precisely the same manner, even if it were absolutely alone in the universe.

This analysis of the different meanings of the word has prepared the way for an exposition of the only intelligible and self-consistent theory of Causation strictly so-called. An Efficient Cause is a definite exertion of power or force, an effort, which is determinate not only in time and place, but in the direction or object to which it tends. Hence, just as much as Final Cause, it is always an act of mind, a primary and self-determining exertion of arbitrary Will, which can be immediately known only through consciousness. In truth, these two sorts of Cause always go together. There is no such thing as Will in general, apart from particular volitions. If I will at all, I must will something in particular — as to take this step towards the door, to lift this weight or push it aside, to read this book. In other words, the volition must always have a purpose or end in view — that is, a motive or Final Cause, *finis ad quem*. The fatalist surely will not object to this theory, for it is the foundation on which he erects his sole argument. And this purpose or Final Cause certainly cannot be directly known except through consciousness; for it is not a phenomenon of matter, but of mind. On the other hand, the purpose, the Final Cause, cannot be realized or made actual — cannot be carried out — except by a special exertion or effort,

that is, by Efficient Causation. If the agnostic fatalist denies this assertion, he thereby denies that the motive determines the outward act, and so upsets his whole theory. In fact, it is of the very essence of mechanical fatalism to attribute efficient and necessary causation even to motives — that is, to mere states of consciousness. Experience through the senses can make known only the *results* of Causation, only the motion or change produced, and from these it can infer the nature of the agency whence they originate. All our knowledge here is *a posteriori*, or subsequent to experience. We learn only by trial that one substance is soluble in water, and another not — that iron expands and clay contracts under the application of heat. But in the case of mental exertion, the result to be accomplished is preconsidered, foreseen, and thereby made determinate and subservient to the particular end in view. Hence the result is known *a priori*, or before experience. The volition follows, which is a real effort, a conscious exertion of power, an immediate cognition of energy as such, or force in action; and this, if the power be sufficient, is necessarily succeeded by the effect. It must be always efficient, whether sufficient or not for the whole purpose which we intended to accomplish. Our real activity resides solely in the will; and will, as such, is always accompanied and guided by intellect, and usually (not always) witnessed by consciousness. Efficient and Final Causation always go together; both originate in mind, and operate upon matter *ab extra*, as a foreign agency. Efficient Cause, without Final Cause, because wholly indeterminate, is null and inconceivable; since it can effect nothing in particular, it cannot effect anything whatsoever. Final Cause without Efficient Cause would be equally nugatory, as it would be a mere blank purpose, like an intention to travel to the moon, without any means of realization.

All physical phenomena, that is, all phenomena subject to observation by the senses, are reducible to modes of motion; they are nothing but changes of position among either the masses or the molecules of the substances in or through which they are manifested. Hence, as there must be room for such movement, they can only occur in space. Whether we call it heat, or light, or electricity, or galvanism, or chemical action,

it is always the same thing; it is only a displacement, a vibration or stir, of particles. It is only by a misnomer or a metaphor that we speak of physical or chemical "forces," since the phenomena thus designated are only various forms and modes of motion, which it is convenient to distinguish from each other by appropriate names, because each has its specific physical antecedents and attendant circumstances. Not "forces," but the "results" of force, are the objects of physical inquiry. Sensible perception is wholly incompetent to establish either the presence or the absence of causation or force strictly so-called. For the sense perceives immediately only the outward phenomenon — the physical change or movement; and from this the physical inquirer *infers*, what he does not and cannot immediately perceive, the presence of some unknown cause or force which produces that change. On the other hand, in the exercise of volition, the conscious mind directly and immediately perceives the force exerted, *i. e.*, the effort, and infers the physical change to be produced by it, even when no result follows, that is, when there is only a *tendency* to move, but no actual change of place. As already mentioned, the conscious volition looks to the future, and both foresees and determines what the physical result *shall be*; the physicist observes only the present result, and judges that a force *has been* exerted. The several physical "forces," so-called, are convertible and readily pass into each other, because they are only different kinds of motion; and it is self-evident that motion can produce or propagate nothing but motion. The moving body can operate only by a thrust or pull, and therefore can produce only a change of place in the body, or portion of a body, on which it impinges or to which it is fastened. Then it is not only incredible, but inconceivable, that it should generate thought, emotion, or will, neither of which can be expressed in terms of motion without evident absurdity. We might as well say that iron could construct a syllogism.

Comte and J. S. Mill, because they held the doctrine here maintained, that Efficient Causes are "radically inaccessible" to perception by the senses, were bound in logical consistency to propose, that the phraseology of physical science should be reformed by refraining altogether from the use of words which

imply the existence of this sort of Causation ; and Comte expressly admitted this obligation, and therefore, in the latter portion of his great work, "sedulously abstains" from mentioning the word "Cause." But Mr. Mill refuses to advocate such a change of language, though he admits that the scientific phraseology is "altogether vicious," "inasmuch as the ascertainment of causes," so-called, is "merely the ascertainment of other and more universal laws of phenomena," that is, only the more accurate statement of the constant relations of succession or similarity between the objects and events which are the *results* of unknown causation. Mill continues to speak of physical "cause," because he does not "see what is gained by avoiding this particular word, when M. Comte is forced, like other people, to speak continually of *agents*, and their *action*, of *forces*," of *power*, "and the like, — terms equally liable to perversion, and which are partial and inadequate expressions for what no word that we possess, except 'Cause,' expresses in its full generality." This is well stated, though the argument leads to a conclusion the very opposite of that which is adopted by Mr. Mill. The whole phraseology of "causation," including even these derivative and cognate terms, of action, agency, force, power, and law, ought to be banished from the language of physical science. These words are misleading, because what is designated by them is imperceptible by the senses, and therefore is not an object of physical investigation. The accurate description of phenomena, together with the proper classification of objects and events, including the various kinds of motion and change, and the precise determination of the constant physical antecedents and consequents of these events, is the sole function of all that is now usually called "Science." If the physicists, chemists, and naturalists, especially those of them who have Positivist or agnostic aims and tendencies, would be logical and consistent, they would leave all thought and mention of cause, energy, power, force, and law to the metaphysician and the psychologist, that is, to the *moral* sciences.

Language inevitably reacts upon thought. Because the physicists have persisted in talking about causation, when, according to their own admission, they meant only invariable an-

tedecence; and of force, power, and energy, when they meant only the motion — either actual or foreseen, either of masses or molecules — which is the result of force, they have been betrayed, in the expression of their doctrines, into statements which are inconsistent with each other, illogical, and even meaningless. Observe, however, that we have here no controversy with them about the facts in the case, so far as these are physical facts — that is, so far as they are subject to observation by the senses, and capable of being foreseen through the ordinary processes of inductive logic. These they have accurately observed, measured, classified, and predicted. But when they attempt to dovetail these facts into systems and theories, to build a philosophy of nature upon them, to give us a new cosmogony and a new conception of man, the universe, and God — or rather, of man and the universe without a God — then they have gone beyond their proper functions, and their use of a phraseology which does not belong to them has betrayed them into countless inconsistencies and absurdities.

Take, for instance, their statements about gravity and about the conservation of force. They speak of “gravity” as if it were a force immanent in matter and necessarily belonging to it, like impenetrability, and then proceed to consider it as the efficient agent in the construction of the universe. But this is a wholly erroneous conception of the case; for any body, or any particle of matter, could it be completely isolated, that is, if it were alone in the universe, would not gravitate at all. Since what is true of any is certainly true of all, it follows that the universe as a whole, with nothing outside of it, does not gravitate; and therefore gravity, is not a quality inherent in matter, but must be regarded philosophically as the result of a metaphysical force situated *between* different bodies, not in them, and as acting upon them *ab extra*, from the outside. Physicists generally have ceased to speak of the “attraction” of gravitation, since that word implies that gravity is a pull; while nobody knows, or ever can know, whether it is a push or a pull. If your acquired habits compel you to think of gravity as a quantum of “force” necessarily inherent in a body and proportional to its mass, you must learn also to think of it as a *relative* force, varying with different physical antecedents, that

is, in proportion to the nearness or remoteness, and to the masses, of other bodies situated outside of it; and also as not acting at all — in other words, as non-existent — where there are no such outside bodies. A body at the surface of the earth, where it is about four thousand miles from the earth's centre of gravity, tends to move towards that centre with a certain momentum; that is, if undermined, we can predict that it would fall with that momentum. But place the same body at eight thousand miles' distance from the centre, and it will so tend to move with only one fourth part of its former momentum. Then, on the doctrine of the conservation of force, what has become of three fourths of the gravitating "force" or "energy" originally inherent in that mass of matter? Nearly twenty years ago, Faraday asked that question, and so far as I know, it has never received any sufficient answer. Brute matter cannot act where it is not, for, as I have already explained, it cannot get outside of itself. Mr. J. J. Murphy has rightly called attention to the fact, that gravity is incapable of saturation; "that is to say, whatever be the quantity of matter that any mass of matter is attracting, it is capable of attracting any additional quantity with exactly the same force as if it had no other to attract." Thus, the sun acts upon any one planet with its whole "force;" but it thus acts with its entire energy on every other planet, and would do so, even if the number of its planets were thrice as great. Phœbus is a skilful charioteer; he drives with the same force and precision, whether four steeds, or four hundred, are yoked to his car.

Any one who has fully pondered these facts will surely accept the conclusion of Sir Isaac Newton, when he says, "that gravity should be innate, inherent, and essential to matter, so that one body may act upon another at a distance through a vacuum, without the mediation of anything else by and through which their action and force may be conveyed from one to another, is to me so great an absurdity, that I believe no man who has in philosophical matters a competent faculty of thinking can ever fall into it. *Gravity must be caused by an agent acting constantly according to certain laws.*" In other words, gravity is not a "potency" of matter at all, but is produced by Mind acting uniformly with a definite purpose. To

the mere physicist, it is only one kind of motion, which may be expected to recur, and to vary, with certain physical antecedents or under certain attendant circumstances; that is, in a fixed proportion to the nearness and the masses of other bodies. *The motion alone is mensurable*, depending on the relations of space and time; and therefore it alone is calculable; *the cause of it*, or the force which urges the moving body along its appointed path, *cannot be measured*, for it cannot even be perceived by sense. Hence the materialist and the merely physical cosmogonist can make no use of it in their vain attempts to explain the secret of the universe.

The principle of physical science which was first styled the conservation of force is now more definitely called the conservation of energy; and we are told that energy should be defined as "force in action." The change of phraseology was necessary, for as the mere physicist has no conception of "force" except as that which produces motion, there was an evident absurdity in speaking of any force which is *not* in action—that is, of a force which does not produce motion. The doctrine that the energy is measured by "the work done" expresses the same meaning in other words; for the work done is the amount of motion produced, and motion cannot be produced except by "force in action." And the new statement of the principle is not a whit more defensible than the old one, since it obliges us to speak of "potential energy." But the potential, so long as it is only potential, is unreal; and therefore merely potential energy is no energy at all. A bit of pure carbon still uncrystallized is a potential diamond; but no one will maintain that it is a real diamond. Then there is no "conservation" of the *same* energy; for when the actual becomes merely potential, the energy or "force in action" becomes non-existent, is for the time destroyed. Then we rightly affirm, not the conservation, but the possibility of creating anew, by a change of circumstances, an amount of energy equivalent to that which has been destroyed. For the conversion of the potential into the actual is a distinct act of creation, since the change of circumstances, by which alone it can be brought about is a separate event, which can be produced only by a cause of its own. The potential does not change it-

self into the actual, but needs to be acted upon anew before the change will take place. Thus, the potential energy of the mill-pond cannot be converted into the actual energy which turns the wheels, except by a fresh application of force in raising the gates of the sluice. In every way, then, this statement of the principle in physical science is unsatisfactory, and even meaningless. It speaks of the conservation of something which is not conserved, but destroyed; and after defining energy to be force in action, it speaks of potential energy — that is, of force in action which is not in action.

So much for the blunders into which the physicists with agnostic aims and tendencies have been betrayed through not properly distinguishing Physical Cause, which is the mere antecedent of motion, from Efficient Cause, which, operating *ab extra*, and so not immanent in matter, really creates the motion. Get rid of this confusion of ideas, and the unquestionable facts in the case may be stated in terms to which no exception can be taken. Do not talk about the conservation of force, but about the convertibility of motion. The principle is, that equal quantities of the two sorts of motion, molar and molecular, admit of being converted into each other. Also, after a given amount of motion has ceased, and after a shorter or longer interval has ensued, an equivalent amount of it may be reproduced through a change of circumstances, which is often brought about by a comparatively slight exertion of force. The precise limits of the convertibility into each other of the different kinds of molecular motion, such as heat, light, electricity, and chemical affinity, still remain to be determined; but there can be little doubt, I think, that science will ultimately establish their mutual convertibility to the full extent.

The scientific world ought to be now prepared to accept the doctrine of Descartes, that matter has no inherent dynamical properties whatsoever, but only a passive capacity of *resistance*; as manifested, first, by inertia, whereby it resists a change of state from rest to motion; secondly, by impenetrability, whereby it resists being extruded from the occupancy of space, and thus becomes capable of being acted upon and of transmitting such action to other matter; and thirdly, of cohesion and hardness, whereby it resists the disintegrating

action of a saw or a hammer. Neither of these forms of passive resistance admits of being converted into active energy or force, since neither of them can *originate* motion.

We have next to inquire whether dynamic energy, though not to be found in the inorganic world, that is, in the constituent particles of matter as such, may not be first developed in the various structures and machines which are artistically built up from those particles; that is to say, may it not first appear in the organic world? Of course, these living organisms act spontaneously; but such action we attribute to a proper efficient cause — that is, to a definite will and intellect operating upon the structure *ab extra*, and therefore never manifested except when there is life within the organism. This is only making the distinction, with which we are all familiar, between a machine of man's device and the motive-power by which it is driven. No machine can be invented which will run of itself; some extraneous force, that of steam, or air, or the muscular strength of men or horses, must be introduced into it and periodically renewed, or the action will stop. If the watch be not wound up, it will not go. But while every machine constructed by man certainly has this great defect, the question with which we are now concerned is, whether one of nature's machines, a living organism, may not be so curiously constructed that it will run of itself, mechanically, without the aid of any distinct principle of mind or life. In other words, are all living organisms, from the animalcule up to man, mere automata? Can we solve the problem of perpetual motion, or has "nature" solved it? With the mere particles of brute matter, which, as we have now shown, have no immanent active powers whatsoever, but only a passive capacity of resistance, can we build up a structure — or rather, can a structure build itself up — which will, so to speak, run itself, and manifest all the ordinary phenomena of life and mind?

The human body, if regarded simply as a mechanical structure, is not merely one machine seemingly put together with a single purpose, but an organism composed of many machines, each having a purpose of its own, but all being coördinated and coöperating for a common and higher end. Thus, speaking roughly, the eye is an opera-glass; the mouth with its ap-

pendages is a mill for cutting, grinding, and masticating food ; the stomach is a chemical laboratory ; the vocal organs form a flute or clarionet ; the heart is a pump ; the circulatory canals are a set of hydraulic works, etc. All these "natural machines" are of recent construction, corresponding with the age of the particular animal in whose body they are now put together, most of them being already perfected, or far advanced towards perfection, even before birth, though the functions of many of them come into activity only after the embryonic period. Thus, they are not only skilfully arranged, but *prearranged* for future use. Children have lungs before they breathe, eyes before they see, ears before they hear, and rudimentary teeth before they need to masticate.

How came these organs to be so constructed ? By whom, or by what, were they thus put together and curiously built up ?

"I don't know," says the Agnostic ; "and because I am not sure what the operating agency is, I will assume that there is none, and will merely describe the successive steps of the process by which they are gradually perfected." According to the Animists, Stahl, Hartmann, and their disciples, the animal's own soul built them up unconsciously. "Through inherited aptitudes," say the Darwinites, "the elementary particles having contracted the habit of thus assembling themselves together, when they were once the constituent atoms of this animal's ancestors:" pretty much as some people continue to go to church after they have ceased to care much about the services. "The vital force — the *nisus formativus* or *bildungs-trieb* — constructed them," say the Vitalists. "The inherent physical energies of material atoms," says the Materialist. "Nature," says the Pantheist. "God," says the Theist.

Thus much, at least, may be affirmed with certainty ; that the power or agency, whatever it was, which first constructed them, must have been anterior in time and action to the organ so constructed, and therefore cannot have been inherent in the organ itself. The cause must precede the effect ; the builder must antedate the building ; since nothing can act before it exists. If the structure is formed on a definite plan, if there is an evident arrangement of the parts with a view to the fut-

ure exigencies of the animal's life, those exigencies must have been foreseen, and the plan prearranged, before the organism itself came into being. Hence, the creative or fashioning agency must be sought for *outside* of the organism; even if *now* embodied in it, as is supposed to be the case with the hypothetical vital force, it must have existed before that embodiment took place. Though the soul has clothed itself with a corporeal integument, it must have been naked before that garment was woven, and even while it was a-weaving. If you tell me that the machine, when once constructed, will run of itself, without the help of any foreign motive-power, your doctrine, whether credible or not, is at least intelligible. But when you say that the organ, as a whole, constructed itself out of materials previously structureless, the proposition is meaningless and self-contradictory.

The argument here is by no means restricted to the genetic process, which appears as the birth and development of the organism. It extends also to the processes of nutrition; that is, to the means which are constantly provided for the maintenance of the organism in being. Directly or indirectly, nutrition is carried on through the conversion of the inorganic into the organic; through the plastic formation, out of chemically simple elements, first of organic compounds, and then of living tissues. Here again, continuously, throughout the whole life, the weaver must precede the web. Whichever way we turn, the life appears as a true cause *secundum esse*, as that which incessantly generates and upholds the organization; while the organism, being the product, cannot be that which upholds the life. Even protoplasm, considered simply as protoplasm, without any adjunct, is as dead as Julius Caesar. It needs the presence and coöperation of preëxisting life, before it can be warmed into animate being. Uproot the plant, or knock the animal on the head, and the protoplasmic constituents of the sap or the blood, though retaining all their characteristic mechanical and chemical properties, will no longer be fashioned into living tissues, but will generate only corruption and death.

The phenomena in question are not made one whit more explicable by referring to the frequency and the regularity of their occurrence. What is called "the reign of law" dimin-

ishes our wonder, it is true, as we are no longer startled by an unexpected occurrence. The event is regarded with more apathy, when it recurs every day and every hour; but it is not thereby made less mysterious. An efficient cause must be found for the frequent repetition of an act, just as much as for its first appearance. A single step in the series is not accounted for by referring it to the preceding step, however familiar the sequence may have become, when the only perceivable connection between the two is mere antecedence and consequence. But many people seem to imagine that, if the successive steps are very short ones, or placed very near each other, a bridge is thereby formed, on which we may pass without difficulty from one extreme to the other, either from the structureless germ up to the complex and perfect organism, or from the animalcule up to man. The whole theory of the evolutionists is founded upon this illusion. But the real difficulty consists in taking any step at all, however short. *Ce n'est que le premier pas qui coûte.* If one has no power of locomotion, he cannot budge the fraction of an inch beyond the starting-point. Even if the Law of Continuity, first announced by Leibnitz, were verified by observation through its whole extent; even if a chain of being were established, without break or leap, from the lowest Monad up to the intellect of an archangel, the successive steps sliding into each other by imperceptible gradations, we should not thereby diminish one whit the necessity of seeking, outside of the series, for a First Cause of all things. Without the agency of Mind, which cannot be found in a chain of mere physical events or self-acting machines, however near they may lie to each other, the first step of evolution, the least movement or change, becomes impossible.

Certain modes of motion and capacities of resistance, improperly called physical or chemical "forces," are invariably connected with definite mechanical antecedents. Here we are in the inorganic kingdom, in the realm of mechanical necessity, where "the reign of law" seems to be absolute. But it should not be supposed that "the law" accounts for the phenomenon, or explains how it is brought about; the law is a mere statement of the fact that, so far as observation has extended, certain events recur only in a fixed order. Even when vital or

psychical forces are carried over, as they frequently are, into this domain, they operate not by extinguishing, or even suspending, the mechanical properties which are there at home, but simply by overriding their opposition, a proportionally larger expenditure, a greater *effort*, of the psychical force being needed in order to overcome this resistance, and the result produced being therefore properly compound, because determined by the joint agency of the force and the resistance acting together. What we term a miracle, therefore, does not violate, or even suspend, any of the so-called Laws of Nature; any more than a chemist does, when, by applying heat or galvanism, he overpowers the chemical affinity which binds together the two elements of a neutral salt; any more than a man does, when, by a strong effort of will, he bursts his chains or lifts a heavy weight. In either case, there is a joint operation of two factors: the one, the physical resistance, being determined by its mechanical antecedents; and the other, the psychical force, being guided by its purpose or Final Cause. The essence of the miracle consists in *the purpose wherein it originates*, and not at all in the nature of the force employed, nor in the outward physical result, which is just as much produced by the interaction of force and resistance as is the stroke of the piston of a steam-engine. When the materialist denies either the possibility or the credibility of psychical force, guided by a definite purpose, thus intervening and changing the ordinary sequence of physical events, he forgets the unquestionable action of his own will in the formation of the spoken or written words which express his denial. Now, if there be in nature distinct and manifest indications of the existence and activity of a Mind and purpose other and higher than the mind and purposes of man — and for this argument, it matters not at all *how much* higher, that is, whether they be merely angelic or divine — then the occurrence of a miracle is just as credible as the story of a St. Francis of Assisi, a San Carlo Borromeo, a Pascal, or an Oberlin. For the life and character of either of these men are as exceptional — I am not afraid to add, as miraculous — as many events recorded in Scripture, which every Christian believes to be miraculous, because he recognizes in them a definite *purpose* to promote the moral and spiritual well-being of mankind.

According to the conclusion at which we have now arrived, matter has only a capacity of resisting a change of state. Efficient Cause and Final Cause, by which alone that resistance can be overcome, and which must operate in combination with each other, can be found only in the action of mind. With this view of the philosophy of Causation, let us go back to consider further the several theories that have been propounded to explain the origin of the various organs in the human body. Among these, the doctrine of the Agnostics may at once be put aside, because it abandons the problem as insoluble; though the open admission of inability to find the true cause is here coupled with an unfounded implied assertion, that it is unnecessary to seek for it, as no such cause exists. The vague abstraction of "Nature" or "Substance," as the occult cause of all phenomena, which is the pantheistic theory, really coincides with the doctrine of the materialists, that the building of the organism is due to the native forces immanent in the senseless particles out of which it is constructed. Both of these forms of the doctrine have been sufficiently confuted in the foregoing part of this discussion. The only other theory which is essentially materialistic in character is that of "Pangenesis," propounded avowedly as a provisional hypothesis by Mr. Charles Darwin, and in a modified form adopted also by Mr. Herbert Spencer. It is open to all the objections which lie against materialism proper, besides having some formidable difficulties of its own. The "gemmules," through which alone the inherited aptitudes are transmitted, form only an infinitesimal portion of the body of the offspring; they are contained in the egg or germ, which is all that is directly handed down from parent to child. The process through which the germ is subsequently developed into the full-grown organism takes place through the gradual accretion, upon the basis of these gemmules, of foreign particles and chemical elements coming from the world outside, which have had no opportunity of being modified by ancestral peculiarities, since they never formed a part of the body of the parent. At most, therefore, the gemmules are only the foremen of the works; they are not the bricks and mortar out of which the edifice is constructed, but only the workmen which determine how these crude materials

shall be put together. Being themselves only particles of matter, their coördinating action upon other particles still presents the insurmountable difficulty of conceiving inert senseless atoms to be endowed with active powers and definite architectural propensities, and to be capable of acting outside of themselves upon other atoms. Whether these powers and propensities were native and immanent in the atoms from the outset, or were superinduced upon them by hereditary descent, makes no difference; for it is inconceivable that they should be lodged there at all.

The three remaining theories easily coalesce into one, which affords the only intelligible explanation of the phenomenon, since it is thereby resolved into the action of Mind, thus admitting the necessary coöperation of Final with Efficient Causation. The evolution of the fully-formed organism from the nearly structureless germ takes place by epigenesis; that is, by a generative process which consists in the exertion of the necessary quantum of force in a determinate manner, or with definite aims and tendencies, so as to construct these particular tissues, and build up these particular organs, rather than any other. The force is not applied at random; if it were, it would be wasted; but it is controlled and guided throughout by what the Germans call the *Gattungsidee*, the idea of the typical form of the species to which the germ belongs. This generative force, acting in accordance with its determinative and guiding principle, is expressed by one school of physiologists as "the vital force," the *nisus formativus* of Blumenbach. Here the Vitalists merely give a name to the constructive process, without attempting to carry the explanation of it any farther.

But the doctrine of the Animists, first propounded by Stahl near the close of the seventeenth century, and now maintained by Bouillier, Hartmann, and a large school of their disciples, supplies this deficiency, and first affords an intelligible theory of the process through which the organism is originally built up, and is afterwards maintained in being. Briefly described, this doctrine is, that the unconscious instinctive action of the animal's own will and intellect — the thinking self, in the case of the human being — is the plastic or formative cause, the

architect of the material structure in which that animal soul has its shelter and its home. This theory harmonizes perfectly with the theist's conception of the process, since it attributes, as Leibnitz does, the primary endowment of each soul with its special instincts to the infinite wisdom of the Author and Governor of all things. May not the unconscious Will in man and animals be the agent of Deity in carrying out the divine plan in creation — an agent which is still finite and limited in its sphere and modes of operation, and thus sometimes leaving faults and imperfection in its work ; but which is still divinely inspired, and therefore capable of producing results immeasurably superior to the best work of the uninspired conscious intellect? “For aught I know,” says Coleridge, “the thinking spirit within me may be *substantially* one with the principle of life and of vital operation. For aught I know, it may be employed as a secondary agent in the marvellous organization and organic movements of my body.”¹

This is an exact description of Instinct — that faculty so marvellous and inscrutable in its modes of work, and in what it accomplishes, that it compelled even the cold and sceptical Kant to cry out, “Instinct is the voice of God.”

Many of the acknowledged results of instinct so closely resemble the work here supposed to be done by it unconsciously, that one is almost compelled to believe the same agency to be employed in both cases. The preservation of the animal's life, the choice and collection of its appropriate food, the continuance of its species, the care of its young, the building of its home, the fit period for its annual migration and the proper direction of its flight, all are tasks performed by its own voluntary efforts, under the guidance indeed of a wisdom immeasurably higher than its own, but through the conscious use of its own organs and muscular powers, which are brought into play by a vague impulse, a blind craving, urging it to attain some useful end of which the creature itself knows nothing. Is it unreasonable, then, to suppose those muscles and other organs are first constructed by the same kind of heaven-directed agency by which they are certainly fed and kept in repair? As Hartmann remarks, the *Gattungsidee* of each species of bird in-

¹ *Biographia Literaria*, New York ed., 1847, p. 569.

cludes the special fashion of its nest and the notes of its peculiar song, just as much as the fashion of its plumage, the structure of its skeleton, and the characteristics of its beak and claws. In either case, an idea is to be realized, a purpose is to be carried into execution, and this is the proper function of will and intellect combined. The nest and the song are certainly the bird's own instinctive acts; why not, also, the fashioning of the organs through which these acts are performed, since these are parts of the same whole, a concatenation of means to one and the same end? It has already been shown that the plastic energy which builds up the organism cannot reside in its own work, since the architect must act before the house can be begun. It is also evident that the soul, though present to the body and intimately connected with it, as the immediate sphere of its activity, cannot strictly be said to be *in* the very substance out of which that organism is constructed, but rather, like every other efficient cause, must operate on it *ab extra*. The directing energy must be outside and virtually independent of the work directed or the thing accomplished.

The unconscious action of the emotions, the thoughts, and other states of mind, upon the corporeal functions, either impeding, or quickening and intensifying, their normal work, and sometimes even bringing the muscles into play in order to ward off danger or to express involuntary sympathy, is matter of the commonest observation. Shame calls up blushes, grief makes the eyes overflow, angry determination knits the brow and sets the teeth, fear blanches the cheek and paralyzes the limbs.

Mihi frigidus horror

Membra quatit, gelidusque coit formidine sanguis.

Obstupui, steteruntque comæ, et vox faucibus hæsit.

These physical consequences of our mental states, so far from being produced intentionally, generally take place in spite of our utmost efforts to prevent them. The involuntary protective action of the limbs and other organs is quicker and surer than our conscious efforts guided by reflection. Before we have time to think, the deadly thrust is parried, the eyelids close against powder flashed in the face, and a sudden spring saves us from a dangerous fall. Involuntary sympathy

sends a yawn all round the circle, repeats the cries and gestures of the intenser passions, and makes the spectators of a rope-dancer writhe and twist their bodies as if they too were in imminent peril. Imagination artfully incited is a more potent bane or antidote than can be found in the whole *materia medica*. One who falsely believes that he has swallowed an active drug often suffers all its real consequences. Thinking and reading about a fancied malady often prostrate the patient with its actual symptoms. Even the death-stroke is sometimes so far anticipated that the sentenced criminal dies before it has fallen. The *stigmata* of St. Francis, and the periodic bleeding afresh of wounds on the hands, feet, and brow of Louise Lateau and other fanatics, do not need to be accounted for by any cause more mysterious than the ill-regulated fervor of their own religious emotions. What is called the coördinating action of the spinal cord and the sympathetic ganglia over the vital functions of the body cannot be rationally conceived except as the unconscious action of mind regulating and keeping in play the curious mechanism which it originally fashioned and put together.

Inherited resemblances and aptitudes become intelligible only when they are conceived as the results of spiritual endowments, and as transmitted in the mind and character which the child certainly receives by direct descent from the parents. I can understand how certain modes of thought should have become habitual to the intellect, and certain modes of action to the will; for we know from experience that either of these faculties, though capable almost of an infinite variety in its modes of operation, may yet easily fall into the ruts of custom and repeat the same theme, even to weariness. But I cannot understand how the mere particles of brute matter should contract any habit whatsoever, except of being systematically quiescent and changeless, when not acted upon by a foreign force, or of continuing indefinitely the simple rectilinear or vibratory motion which has once been impressed upon them. The Darwinian gemmules, inconceivably minute in size, are nearly akin to the Leibnitzian Monads; and, like these, must be supposed to be units of spiritual being, which furnish the only rational theory and explanation of those phenomena of heredi-

tary transmission and efficient and final causation which are manifested in the organic kingdom.

Because Efficient Causation is conceivable only as an exertion of force, I have argued that it must be regarded as Transcendent and transcendent; that is, as operative on other things *ab extra*, and thereby as producing change externally and beyond itself. Hence it cannot be attributed to mere brute Matter, which must be conceived as occupying space, and therefore as limited by the space so occupied. But does such transcendent action become any more intelligible when it is regarded as the action of Mind? In one respect it certainly does; for it harmonizes with whatever else we know respecting the nature and peculiar functions of Mind. Knowledge is one of these functions, and the sphere of knowledge is certainly not limited to what takes place within the thinking Ego, but extends to what lies far outside of it, both in time and space. We know both the past and the distant, and we anticipate even the future. Consequently, as the mind certainly, in one sense, extends its sphere of operation out of itself, and even goes beyond the limits of the body, in order *to know*, we may well believe that it exercises an equally transcendent power in order *to act*. As I have already argued in the previous article, the thinking Self (which is the proper designation of what is usually called "mind"), since it is absolutely one and indivisible, does not occupy space, and yet is undeniably present to the whole nervous organism which it animates. All that is inside of the skin is also inside of consciousness. I feel not only at my finger-tips, but over the whole surface of my body. Instantly, and without the slightest doubt, I localize a pain, as in the head, the knee, or the back, and put my finger at once upon the spot where a mosquito has stung me. Without the least difficulty or effort, the will bends any joint and contracts any muscle that is usually subject to its conscious action. Granted that we cannot conceive *how* the Ego exercises this marvellous power; still the fact is unquestionable that it *does* exercise it; it is omnipresent to the whole body.

It is also easy to show that the thinking Self is not any more subject to the limitations of Time, than to those of Space. Analyze even the simplest act of memory, and you will find

that, not merely a mental image or picture of what has been, but the Past itself, must be actually *present* to consciousness. What enables me to decide without hesitation, that the portrait now before me presents either an accurate or an unfaithful copy of the features of my friend, who died ten years ago? An act of comparison is necessary here; the painter's work can be judged only by a reference to the living face of which it professes to be a copy. Then that living face must even now be present to my consciousness; otherwise, I should have no standard whereby to estimate the artist's work. But you will doubtless say that this standard is only a mental image, only another picture called up by the imagination, and attested by the memory to be a faithful likeness. Consider for a moment, however, and you will find that this answer leaves the matter short, as it merely pushes the difficulty one step farther back. For the question immediately recurs, What convinces me that the picture thus presented by my imagination is a more faithful portrait than the one on canvas? Of course, memory says that this one is the true image, and the other is only a counterfeit. But how *could* memory say so, except through comparing both pictures, the one seen by the outward sense and the other visible only to the mind's eye, with the original of which they both profess to be a copy? Turn the matter as we may, then, the Past must be veritably present to consciousness, or we could know nothing about it except by vague conjecture. Memory does not conjecture, but affirms with absolute conviction, even repeating its testimony on oath when a question of life or death is pending. As I have elsewhere urged, we could not be sure of our personal identity, if our past Self and our present Self were not both present to consciousness, so as to be compared with each other and recognized as identical.

Hence I feel constrained to adopt the conclusion, which is accepted also by Dean Mansel and Schopenhauer, that the conscious Self is independent both of Time and Space. Its acts and manifestations, indeed, as presented either to the external senses or to consciousness, are necessarily subject to these two forms and conditions of all phenomenal being. My volition can appear in outward act only through movements which require Space; and my thoughts are subject to the law of Time,

since they can be presented only in succession to my consciousness. But the conscious Subject of these mental states belongs to the realm of ontology, or pure being; it is a noumenon, and as such it transcends the laws and conditions of all phenomena. It is finite indeed, and therefore limited and dependent; it can act, remember, and think only within the restricted sphere marked out for it by an all-wise Providence. But though his finite nature exposes him to error and sin, Man is still made in the image of God; he is free, responsible, and immortal, while neither of these three attributes belongs to any other form of created being. And he is also made after the likeness of his Creator, in that the unity and indivisibility of his inmost being emancipate him from the laws of Space, while his responsibility and undying nature are equally free from the limitations of Time.

THE LATEST FORM OF THE DEVELOPMENT THEORY.

FROM THE MEMOIRS OF THE AMERICAN ACADEMY, NEW SERIES, VOL. V.

Communicated March 27, April 10, and May 1, 1860.

IT is a familiar truth in palæontology, that the various races or species of animal and vegetable life which now tenant the earth, or have formerly tenanted it, did not originate all at once, but have been introduced at different and widely separated epochs. Those of which the remains are entombed in the earlier fossiliferous strata are now all, or nearly all, extinct; only a few among the Invertebrates have living representatives at the present day. And as the process of extinction was not sudden or sweeping, but gradual and protracted, so the new species appeared in succession, after long intervals of time, to fill the vacant places. "It appears," to adopt Sir C. Lyell's language, "that from the remotest periods, there has been ever a coming in of new organic forms, and an extinction of those which preëxisted on the earth; some species having endured for a longer, others for a shorter time; while none have ever reappeared after once dying out." The species which are now in existence belong, geologically speaking, to comparatively recent times; indeed, none of the higher order among them are found in a fossil state at all.

Only two theories are possible as to the origin of all the species which have thus been successively introduced upon the earth. The one refers the beginning of each to a special act of creative power. The work of creation, upon this view, was not begun and ended at one time, but has been frequently renewed and extended, no period being without some manifestations of it in the appearance of new forms of life. This doctrine rests upon the fact, confirmed by all observation, that, in the ordinary

process of reproduction, each species gives birth only to those of its own kind. It is contrary to universal experience, in the case of well recognized and perfectly distinct species, that fertile offspring, capable of continuing their own race, should be specifically different from their parents. Accordingly, if a new form or species appears, it cannot have been produced by ordinary generation, but must have been specially created.

The other theory, resting mainly upon obscure and anomalous cases, or upon processes supposed to be of so great length that man cannot have witnessed the beginning and end of them, assumes that various species have been developed out of one another by ordinary descent, the progeny appearing, either immediately or after many generations, specifically different from their parents or ancestors. According to this view, the multiplication of species takes place by a process perfectly analogous to that of the multiplication of individuals of the same species, though it is more infrequent, or requires a greater length of time for its completion. This is the Development Theory, so called, which has been maintained, with various modifications, by Maillet, in a work called the "Telliamed," by the French naturalist, Lamarck, by the English author of the "Vestiges of Creation," and in its latest form by Mr. Charles Darwin. The earlier forms of it have been rejected by the well-nigh unanimous verdict of the scientific world; the latest has been urged with so much ability and candor, and has already found so many adherents, that it merits distinct and respectful consideration.

Mr. Darwin's theory of the origin of species by development really consists of five distinct steps or processes, which need to be sharply distinguished from each other, though two or more of them are often confounded under the same name.

1. *Individual Variation*. — It is a well-known fact, that individual plants and animals are occasionally found to vary by slight peculiarities from the general type of the race or breed to which they belong. The offspring is made a little bigger or a little smaller than its parent; or some organ, member, or limb is abnormally repeated or deficient, or wrongly placed, or unusually developed, whether by excess or defect.

2. *Inherited Variation*. — Generally, these abnormal traits

are found only in the individuals in which they first appear, the offspring of these reverting immediately to the ancestral or common type. Sometimes, they are continued by descent through two or three generations, and then finally disappear. Less frequently, if at all, they are continued by inheritance indefinitely, so as to become the distinguishing mark of a peculiar breed. Mr. Darwin's theory rests exclusively upon those which are thus *perpetuated* by inheritance; "any variation," he says, "which is not inherited, is unimportant for us."

3. *Cumulative Variation*. — One peculiarity having been perpetuated by inheritance, it is assumed that another may be superinduced upon it by a perfectly analogous process, and then a third, and so on indefinitely; so that the divergence from the parent stock, at first slight and unimportant, may be extended as far as we please, till it will bridge over the interval between the two extremes of animal life. Thus, if time enough be allowed for the process, we can account for the development of man himself out of a zoöphyte.

4. *The Struggle for Life*. — Every species of animal and vegetable life, the human species included, can multiply its own numbers without end, this capability being always exercised according to the law of a geometrical progression. If it were exerted to the utmost, without any check from external circumstances, any species might be so multiplied that it would soon need to occupy the whole face of the earth. But as this power is possessed by all, there must be perpetual competition between them for the ground and for food. A battle for existence is constantly going on, the stronger species always tending to push out the weaker, the one better adapted to the locality or the strife forever usurping the place of its less qualified rival. Hence the extinction of the countless races whose existence is now known only from their remains imbedded in the rocks.

5. *Natural Selection*. — Through the three processes of Variation, Nature is perpetually furnishing fresh combatants for this unceasing strife; and any peculiarity, however slight, of one of the new races, *may be* a source of strength or weakness, and thus lead to victory or defeat in the contest, — that is, to the preservation or extinction of one or more parties to it. Each variation, if it be an improvement in the adaptation of an

organ to a function, or of a species to its locality or environment of circumstances, will tend to preserve the race ; if the opposite, to kill it out. Thus the nicest adaptations of means to ends are accounted for, without any necessity of supposing that they were intentional or designed. The success, however insured, of any new-comer over its immediate competitor, is often attended with a train of consequences fatal to the continuance of a whole set of preëxistent species, and favorable to the ultimate introduction of new ones in their place.

It appears from this analysis, that the appellation which Mr. Darwin has given to his own theory is a misnomer. He calls it "the Origin of Species *by Means of Natural Selection*, or the Preservation of Favored Races in the Struggle for Life." But it is evident that *the origin* of species is fully accounted for, if at all, by the first three steps of *Variation*, which alone explain the introduction and indefinite multiplication of new forms of life ; of the two remaining steps, one, the Struggle for Life, is of use only to account for *the extinction* of species formerly in being ; and the other, Natural Selection, is adduced merely to explain that nice adaptation of means to ends, so apparent throughout the animal and vegetable kingdoms, which has been held to prove design, and so to evince the intelligence of the Creative Cause. A theorist who denies the necessity of any intervention of such a Cause at any period subsequent to the introduction of the first poor germ of life upon the earth is, of course, bound to show how these adaptations became so numerous and so perfect ; and Natural Selection is the very ingenious hypothesis which Mr. Darwin has framed for this purpose.

The state of the evidence upon each of these five points, and the bearing of each upon the main question, may be briefly summed up as follows : —

1. Individual Variation is the one admitted fact upon which the whole theory rests, but which, considered in itself alone, does not aid us at all in the attempt to explain the introduction of new *races* of being. It accounts at the utmost for the appearance of new *individuals*.

2. Inherited Variation is more questionable, the general rule undoubtedly being that peculiar and anomalous features —

deformities, monstrosities, or *lusus naturæ*, as they are often termed — are either not transmitted at all by descent, or disappear in the course of two or three generations. Whether they disappear because a congenital peculiarity, like an acquired one, such as a scar, a callus, or a stiffened joint, not affecting the organs of reproduction, has no tendency to reproduce itself in the offspring; or because the monstrosity is itself a sign or a consequence of some weakness or defect of constitution, whereby the varying individual is rendered less capable than others of continuing its kind; or because the necessary crossing of the altered breed with one that is unaltered soon reduces the abnormal growth to nothing; or that breeding in and in, which results from the avoidance of crossing, so weakens the stock that it soon ceases to be fertile; or whether several of these causes combined hasten the work of extinction, — certain it is, that Nature makes haste to eliminate these departures from type, and to preserve her own original stamp unchanged. Art may to some extent, and with much painstaking, counteract Nature, laboring to preserve and continue the abnormal developments which happen to suit man's convenience or fancy, through enforced isolation and regimen, diligent culture, or multiplying or changing the food; but the very necessity of adopting these expedients shows the *tendency* of Nature to be the other way, towards the extinction of the forced growth. As Mr. Darwin himself remarks, "sterility is the bane of our horticulture;" and with all the care and skill of the most expert breeder of cattle, the progeny of his best specimens often disappoint his expectations, and show an unmistakable tendency to revert and degenerate.

Of course, it is admitted that what are called permanent "Varieties" exist, which, with but few precautions, may be made to breed true; but that these so-called "Varieties" originated in Individual Variations perpetuated by inheritance, or that they were not just as much original or special creations as the Species themselves under which they are ranked, is matter only of hypothesis and conjecture. With respect to the numerous "Varieties" of our dogs, horses, sheep, goats, pigeons, etc., Mr. Darwin "believes," or is "doubtfully inclined to believe," or is "fully convinced," that they came either

from one wild stock, or from several ; or he " can form no opinion " on the subject. But science cannot be made to rest on mere " opinion." That we cannot trace the history of these Varieties *ab origine* is confessed. We cannot trace the stream to the fountain-head ; but we can follow it far enough to be sure that it has remained unchanged for thousands of years. The greyhound existed under the form which it now bears at least as early as some of the oldest sculptures in Egypt ; and various " breeds " of pigeons were pets of the Pharaohs about five thousand years ago.

3. But with whatever success the doctrine of Inherited Variation may be applied to explain the existence of *Varieties*, it is certain that the origin of *Species* can be accounted for, on the Development Theory, if at all, only by Cumulative Variation, — that is, only by supposing a vast number of Inherited Variations to be successively superinduced one upon another. Doubts have been raised upon this point only on account of ambiguity in the meaning of words, or from want of agreement as to the principles of classification. Many races, both of animals and vegetables, appear to be so nearly allied to each other, that certain naturalists consider them as mere Varieties ; others persist in considering them as so many distinct Species. Mr. Darwin himself remarks, that the distinction between Varieties and Species is " entirely vague and arbitrary ; " and says, in reference both to plants and animals, " that many forms, considered by highly competent judges as Varieties, have so perfectly the character of Species, that they are ranked by other highly competent judges as good and true Species." Fortunately we do not need, so far as our main question is concerned, to enter into the intricacies of this discussion. The advocates of the Development Theory undertake to prove that *all* Species of animals, even those differing most widely from each other, " have descended from at most four or five progenitors, and plants from an equal or lesser number." Putting aside altogether, therefore, the much debated question whether the several races of men are only Varieties, or are so many distinct Species, and the same question with respect to dogs, there is no doubt that men and dogs belong respectively to different Species. And generally, putting aside the question

whether the offspring of certain races, when crossed, are entirely sterile or only partially so, there is no doubt that animals or plants belong to distinct Species when they cannot be crossed or made to interbreed at all. It is enough to say, then, that only Cumulative Variation — and that of a vast number of successive steps — will account for the common origin of animals which will not copulate with each other, or of plants which cannot be crossed.

Now, on this cardinal point, which contains the essence of the Development Theory, since all the other questions involved in it are of no substantive importance, so far as what may be called the Philosophy of Creation is concerned, the direct evidence fails altogether, and we are left exclusively to the guidance of conjecture, and analogy, and estimates of what is possible for all that we know to the contrary. It is not even pretended that we have any direct proof, either from observation or testimony, that two Species so distinct that they will not interbreed have yet sprung from common ancestors. On the contrary, Mr. Darwin's own supposition is, that the process of developing two entirely distinct Species out of a third is necessarily so gradual and protracted as to require a *quasi* eternity for its completion, so that only a small portion of it could have been accomplished during the limited period of man's existence upon the earth.

In the absence of any direct proof, then, it remains to be inquired if there are sufficient grounds of probability, reasoning from analogy and the principles of inductive logic, for believing that all Species of animals and plants may have originated from three or four progenitors. In speaking of the amount and frequency of Individual Variation, Mr. Darwin and his followers abuse the word *tendency*. After heaping up as many isolated examples of it as they can gather, they assert the legitimate inference from such cases to be, that the species *tends* to vary, leaving out of view the fact that a vastly larger number of individuals of the same species *do not vary*, but conform to the general type. And though only one out of a hundred of these Individual Variations is transmitted by inheritance, yet, after collecting as many instances of such transmission as they can find, they affirm that a Variation *tends* to become

hereditary. But it is not so. *Tendency* is rightly inferred only from the *majority* of cases; a small minority of favorable instances merely shows the *tendency* to be the other way. Thus, the cars do not *tend* to run off the track, although one train out of a thousand may be unlucky enough to do so; but the general law is, that they remain on the track. Otherwise, people would not risk their lives in them. So a considerable number of children have been born with six fingers on each hand, and a still greater number with harelips. And yet we say that the *tendency* is for each hand to have only five fingers, and for the upper lip and palate to be closed. The advocates of the Development Theory violate the first principles of inductive logic, by founding their induction not, as they should do, on the majority—the great majority—of cases, but on the exceptions, the accidents. Their whole proceeding is an attempt to establish a philosophy of nature, or a theory of creation, on anomalies, — on rare accidents, — on *lusus naturæ*.

This single objection is fatal to Mr. Darwin's theory, which depends on the accumulation, one upon another, of many successive instances of departure from the primitive type. For if even Individual Variation appears only in one case out of a hundred, — and all naturalists will admit this proportion to be as large as the facts will warrant, — and if, out of the cases in which it does appear, not more than one in a hundred is perpetuated by inheritance, then should a second Variation happen, what chance has it of leaping upon the back of one of the former class? The chance is one out of $100 \times 100 \times 100 = 1,000,000$. And the chance of a third Variation being added to a second, which in turn has been cumulated upon a first, will be one out of 100 raised to the fourth power, or 100,000,000. It is not necessary to carry the computation any farther, especially as Mr. Darwin states that the process of development can be carried out "only by the preservation and accumulation of infinitesimally small inherited modifications." Of course, the interval between two Species so distinct that they will not interbreed could be bridged over only by a vast number of modifications thus minute; and on this calculation of the chances, the time required for the development of *one* of

these Species out of the other would lack no characteristic of eternity except its name. But the theory requires us to believe that this process has been repeated an indefinite number of times, so as to account for the development of *all* the Species now in being, and of all which have become extinct, out of four or five primeval forms. If the indications from analogy, on which the whole speculation is based, are so faint that the work cannot have been completed except in an infinite lapse of years, these indications practically amount to nothing. The evidence which needs to be multiplied by infinity, before it will produce conviction, is no evidence at all.

4. What is here called the "Struggle for Life" is only another name for the familiar fact, that every Species of animal and vegetable life has its own Conditions of Existence, on which its continuance and its relative numbers depend. Remove any one of these Conditions, and the whole Species must perish; abridge any of them, and the number of individuals in the Species must be lessened. The intrusion of a new race which is more prolific, more powerful, more hardy, or in any way better adapted to the locality, may gradually crowd out some of its predecessors, or restrict them within comparatively narrow bounds. Thus the introduction of the Norway rat has banished the former familiar plague of our households and barns from many of its old haunts, and probably reduced the whole number in this Species to a mere fraction of what it once was. Civilized man also has successfully waged war against many ferocious or noxious animals, and probably exterminated some of them. But the appearance of a rival or hostile race is not the only cause of such diminution or extinction. A change in the physical features of a given district may partially or entirely depopulate it, without the necessary introduction of any new-comers. The drying up or filling up of a lake is necessarily fatal to all its aquatic tribes. The gradual submergence of an island or a continent must exterminate, sooner or later, all the native Species which were peculiar to it. And at the utmost, the failure of any Condition of Existence, whatever may be its character, only leaves vacant ground for the future introduction or creation of new forms of life, without tending in the slightest degree to bring such new forms into existence.

5. Natural Selection, also, as already remarked, has nothing to do with the *origin* of Species, and, in its abstract form, is only the statement of a truism. Of course, when two or more Species crowd each other, the more prolific or more vigorous, other things being equal, is more likely to gain possession of the disputed ground, and thus to diminish the numbers of the other, or oblige it to migrate, or, in rare cases, to kill it out altogether. But this last supposition is a conceivable rather than a probable result. All observation goes to show, that every Species retains a very persistent hold upon life, however feeble may be the tenure of existence for its individual members. Its numbers may be materially diminished; it may be forced to shift its ground, and to suffer in consequence some slight change in its habits (Mr. Darwin himself tells us of upland geese, and of woodpeckers where there are no trees); it may be driven into holes and corners; but somehow it still survives. Utter extinction of a Species is one of the rarest of all events; not half a dozen cases can be enumerated which are known to have taken place since man's residence upon the earth. And these, surely, are a very insufficient basis on which to found a theory embracing all forms of life. Yet man is the greatest exterminator the world has ever known. His physical powers, coupled with the use of reason by which they are multiplied a thousand-fold, enables him to wage internecine war with comparative ease against nearly every race that molests him. Only the insect tribes, through their immense numbers and their littleness, can successfully defy him; and these not always. In *his* Struggle for Life, all other creatures, animal or vegetable, must retreat or perish. Yet how few has he rooted out altogether! But the Development Theory requires us to believe that this process of extinction, guided by Natural Selection, has been repeated well-nigh to infinity. Not only all the races which are now found only in their stone coffins, but countless others, — “the interminable number of *intermediate* forms which must have existed” as connecting links, and a still greater crowd of other Varieties not intermediate, but gross, rude, and purposeless in their formation, — the unmeaning creations of an unconscious cause, — must all have perished, each through

its own peculiar repetition of a series of events so infrequent that we can hardly compute the chances of their happening in any one case.

It is easy to see why the extermination of a species, even upon the conditions of Mr. Darwin's theory, should be so infrequent. He holds that all the races which have originated upon the earth, since the primeval act of creation first grudgingly threw only four or five seeds of existence into the ground, have been shaded into each other by gradations so slight as to be nearly imperceptible. Differing so slightly from each other, the advantage possessed by any one of them in the Struggle for Life must have been almost indefinitely small. But a peculiarity important enough to preserve those who have it, while whole species must die out because they have it not, cannot be thus trifling in character. It must have been one of grave moment; not a slight variation, but a jump. The successive development of new races — itself, as we have seen, an extremely slow process — must have been continued through numerous steps, before the divergence resulting from it could have been serious enough to enable one of the divergent stocks to overcome and exterminate the other. Numerous species of the same genus now coexist, often within the bounds of a not very extended territory, without any one of them showing any tendency to supplant or exterminate another. Thus, South Africa is the country *par excellence* of the antelope; about fifty species of this animal have been found there, many of them very abundant, notwithstanding the numerous *Carnivora* that prey upon them; and yet none of them showing any tendency to die out before civilized man came thither, and brought gunpowder along with him.

Natural Selection can operate only upon races previously brought into being by other causes. In itself, it is powerless either to create or exterminate. In the Development Theory, its only function is, when the number of different species is so far multiplied that they crowd upon each other, and the extinction of one or more becomes inevitable (if we can conceive of such a case), then to make the *selection*, or to determine which shall be the survivors and which the victims. As individuals of the same species, the same variety, and even of the same

flock, certainly differ much from each other in strength, swiftness, courage, powers of endurance, and other qualities, Natural Selection has an undoubted part to play, when the struggle comes for such a flock, in determining which of its members shall succumb. But that it ever plays a corresponding part in the grand contest of species imagined by Mr. Darwin, is a supposition resting upon no evidence whatever, but only upon the faint presumption afforded by the fact, that certain species at widely separated times have become extinct, through what causes we know not; and therefore, for all that we know to the contrary, Natural Selection may have had something to do with their disappearance. This is to found a theory, not upon knowledge, but upon ignorance. If such reasoning be legitimate, we are entitled to affirm that the moon is inhabited by men "whose heads do grow beneath their shoulders." It may be so, for all we know to the contrary.

This review of the state of the evidence upon each of Mr. Darwin's five points is enough to show that the testimony fails entirely just where it is most wanted. Facts and arguments are accumulated where they are of little or no avail, because the conclusions to which they tend, when properly limited and qualified, are admitted and familiar principles in science. But the theory of the Origin of Species *by Cumulative Variation*, which is all that is peculiar to this form of the transmutation hypothesis, rests upon no evidence whatever, and has a great balance of probabilities against it. Individual Variation, the Struggle for Life, and Natural Selection, each within clearly defined limits, are acknowledged facts, which still leave the main question in the philosophy of creation precisely where it was before; and even the doctrine of Inherited Variation relates only to the *origin of Varieties*, which is a distinct question, and one of subordinate importance and interest, except to naturalists. Mr. Darwin has invented a new scheme of cosmogony, and finds that, like other cosmogonies, it is a blank hypothesis, not susceptible either of proof or disproof, and needing an eternity for its development. There is nothing new in such a speculation of what is possible in an infinite lapse of years. This latest form of the speculation has no advantage over the one first propounded some three thousand years ago;

— that a chaos of atoms, moving about fortuitously in infinite space, may have happened, in an eternity, to settle into the present kosmos; for the chance of order and fitness is at least one out of an infinite number of chances of disorder and confusion; and, in an infinite series of years, this solitary chance must sooner or later be realized. Mr. Darwin begins, not with a crowd of inorganic atoms, though consistency required him to do so, but with four or five primeval organisms very low down in the scale, — say zoöphytes and mollusks; and supposes these to multiply and to vary their organization at random, each Variation, if an improvement, being preserved, and if useless or injurious, being killed out by Natural Selection; and thus, in an eternity, the present kosmos of animal and vegetable life may have been perfected, not exactly out of chaos, but out of very few and poor rudiments of life, without the necessary intervention anywhere of an intelligent Creative Cause.

Every such speculation must be rejected, because it is self-contradictory. It professes to develop a Theory of Creation, — to explain the beginning of things; and in order to do so, it is obliged to assume that the present or ordinary succession of phenomena, the common sequence of causes and effects which we every day witness, has continued from eternity; that is, that there never was any Creation, and that the universe never began to be. It professes to untie the knot, and ends by denying that there is any knot to untie. Mr. Darwin is too imaginative a thinker to be a safe guide in natural science; he has unconsciously left the proper ground of physics and inductive science, and busied himself with questions of cosmogony and metaphysics.

We are at liberty, then, to consider the relations of this Development Theory to the great doctrines of philosophy and theology, without shifting the question, or seeking to place it upon any other grounds than those upon which the author himself bases it; above all, without seeking to build up an argument *ad invidiam*, a purpose which is here emphatically disclaimed.

Most interesting and important among these relations is its bearing upon the doctrine of Final Causes. The denial of

such Causes — that is, the doctrine that purpose, intention, or design is nowhere discoverable in organic nature — has been reproachfully urged against some naturalists, on account solely of the tendency of such denial to weaken the arguments of the theist. Of course, it does have such an effect; for what has ever been the principal, most intelligible, and most popular argument for the being of a God rests entirely upon the assumption that adaptations, especially if nice and complex, *prove* design, or must have been intended. But it is a mistake to suppose that Final Causes have no use or meaning in philosophy and science, apart from this application for a theological purpose. Aristotle first described and designated them, distinguishing them from the three other sorts of causes (Material, Formal, and Efficient), without even hinting at their bearing on the doctrine of the theist; while Harvey successfully used the assumption of a Final Cause as an instrument of discovery, and Cuvier did the same; and it is in reference only to such use, viz. as instruments of physical research, that Lord Bacon condemned the study of Final Causes.

And here it may be observed, that palæontologists, like Mr. Darwin and Sir Charles Lyell, cannot, without gross inconsistency, repudiate the doctrine of Final Causes; for in so doing, they deny the justice of the very inference, or assumption, call it what you may, on which their whole science is based. Geologists have no better reason, and no reason of a different kind, for affirming that *fossil* animals and plants did once, millions of years ago, exist as *living* animals and plants, than philosophers and theologians have for declaring that the animal and vegetable kingdoms — *i. e.* God's works — show purpose and intention just as clearly as man's works do. No direct proof is possible in either case. The only argument is from analogy and an appeal to common sense. The sceptic may defy Mr. Darwin to prove *directly*, that the Silurian fossils did not exist primarily, *ab origine*, in the rock where we now find them, — composed of stone, as they now are. For, take the doctrine of Democritus and Epicurus, which, as already intimated, is the progenitor of this Development Theory. If the mere fortuitous concourse of atoms, in the lapse of a past eternity, can have formed a *living* tree, fish, or elephant, then,

we say, that same rudderless and purposeless crowd of primeval atoms, in the lapse of a past eternity, can have formed, what is much easier, a fossil tree, fish, or elephant, *as fossils*.

Yet Mr. Darwin assumes the previous existence of these fossils in a living state, as a means of building up a theory which shall enable him to assert, that "a structure even as perfect as the eye of an eagle might be formed by natural selection;" that is, without any special design or intention to create an organ of vision. He admits that "it is scarcely possible to avoid comparing the eye to a telescope. We know that this instrument has been perfected by the long-continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process." But he asks, "May not this inference be presumptuous? Have we any right to assume that the Creator works by intellectual powers like those of man?" But this is not the question. There is just as much "presumption" in assuming to determine that the Creator *ought not* to work in a given manner, or through certain "intellectual powers," as in taking it for granted that he *would* or *must* employ such means. In either case, this is assuming to set bounds to Omnipotence, and to prescribe how Infinite Wisdom ought, or ought not, to act. Our only business, as students of natural science, is to follow the evidence wherever it may lead us, and to be consistent in the inferences which we draw from it, leaving it to philosophers and theologians to reconcile, if they can, our conclusions with their preconceived ideas of what is becoming to the Creator. If they cannot reconcile them, so much the worse for their preconceived ideas. Our only question is, Whether it is consistent to infer, from a general analogy of structure with living forms at the present day, that certain fossilized skeletons were living organisms millions of years ago, though we confidently deny, in spite of the far more striking analogy between an eagle's eye and a telescope, that an intelligence presided over the formation of the one similar to that which we know to have concurred in the production of the other? Can we justly infer *life* from a general analogy of structure, while we refuse to infer *intelligence* from a far more obvious analogy in the adaptation of means to ends? Mr. Darwin and Professor

Baden Powell answer this question in the affirmative ; and it is for them to defend their consistency as they may.

The purpose of the Development Theory, in any of its forms, is to exclude the necessity of believing in any special creative act, or any exertion of intelligence and will, and to refer all physical phenomena, the first appearance of new and distinct races included, to the continuous and uninterrupted action of what are called secondary causes, or natural laws. In pursuance of this purpose, even the primitive act of creation, by which the universe was first evolved out of nothingness, or out of a chaotic mass, is either denied, or, what is the same thing, is removed to an infinite distance. An *absolute beginning*, either of the universe, or of any species of animal or vegetable life in the universe, is, on this Theory, an impossible or inadmissible conception. Alluding to the opponents of this doctrine, Mr. Darwin observes : “ These authors seem no more startled at a miraculous act of creation than at an ordinary birth. But do they really believe that, at innumerable periods in the earth’s history, certain elemental atoms have been commanded suddenly to flash into living tissues ? ” And Professor Powell still more distinctly remarks, “ that strict science offers no evidence of the *commencement* of the existing order of the universe. It exhibits, indeed, a wonderful succession of *changes* ; but however far back continued, and of however vast extent and almost inconceivable modes of operation, still only *changes* ; occurring in recondite *order*, however little as yet disclosed, and in obedience to physical laws and causes, however as yet obscure and hidden from us. Yet in all this there is no *beginning* properly so called : no commencement of existence when nothing existed before : no *creation* in the sense of origination out of non-existence, or formation out of nothing. Even without referring to that metaphysical *conception*, or more properly metaphysical *contradiction*, to imagine anything which can be strictly called a *beginning*, or first formation, or endowment of matter with new attributes, or in whatever other form of expression we may choose to convey any such idea, is *altogether beyond the domain of science*, as it is an idea beyond the province of human intelligence.”

Still it might be maintained that, although science gives us

no glimpse of a Creator, it does point to an Architect of the universe, in so far as it discovers and analyzes the innumerable and marvellous adaptations of means to ends, by which this earth is rendered a fitting and convenient habitation for all the tribes that tenant it, and by which the organization of each plant and animal is nicely adjusted to the place which it occupies, and to the work which it has to perform. To rebut this conclusion, Mr. Darwin brings forward his improvement of the transmutation theory, in which, as already remarked, the office of Natural Selection is to explain and account for all natural adaptations and adjustments, even the nicest and most complex, without any necessity of supposing that they were intentional or designed, and consequently without any need of referring them to the action of an all-wise Architect.

A careless thinker might yet argue, that Natural Selection itself is only an agent of the Deity, or a law established by Him *for the very purpose* of effecting the adaptations which are ascribed to it, and which would therefore still be properly regarded as the work of Him by whose will and wisdom they were fashioned. But such an argument would betray only confusion of thought. For "Natural Selection" is neither a created thing, nor a cause, nor a law dependent on the volition of a lawgiver; but it is an abstraction and a generalization. It is not "Natural Selection" that kills out one or more species, and preserves others; but climate, food, space, enemies, — or the want of them, — these do the work of killing or preserving. God no more created or enacted the law of Natural Selection, than he created or enacted the Binomial Theorem. The Binomial Theorem is the necessary result of the necessary relations of numbers, and even Omnipotence could not abrogate it. Just so, Natural Selection is the inevitable result of the relations of animals to their conditions of existence; or rather, it is a general expression for these relations themselves; and thus Omnipotence could not abrogate it. Change the climate, food, space, enemies, etc., and Natural Selection would still act, but would kill where it now preserves, and preserve where it now kills. Thus, the results of the Theory are necessary or fatalistic; they blot God out of creation everywhere.

Moreover, in regard to the peculiarities, or Individual Variations, on which the Theory is based, and on which this principle of selection is to operate, there is an equal exclusion of intelligence and will, and even of law and order. As already explained, these peculiarities are the exceptions and monstrosities, — the phenomena which least of all admit of being reduced to law, or referred to the action of any uniform cause. These aimless and exceptional *lusus naturæ*, as they appear to most observers, form the chaos or rude matter of the Development Theory, on which the principle of Natural Selection, like the *deus ex machina*, is to operate, and evolve order out of confusion and complex adaptations out of accident. In fact, this principle would have nothing to do, — it would not be *selection*, — if the Individual Variations were not multiplied at random, and were not purposeless in character. The essence of the hypothesis is, that “there is a power always intently watching each slight *accidental* alteration,” and finding a use or fitness where none was intended; just as a savage, wandering on a sea-beach, may, after long search, find a stone which has a rude semblance of a chisel or an axe, and use it as such. Hence Mr. Darwin speaks consistently of “giving a *better chance* of profitable Variations occurring; and unless profitable Variations do occur, Natural Selection can do nothing.” But they will occur, for “Variation will cause the slight alterations, generation will *multiply them almost infinitely*, and Natural Selection will pick out with unerring skill each improvement,” separating it from countless others which are not improvements, but, as useless or injurious, are to be eliminated. “*Mere chance*, as we may call it, might cause one variety to differ in some character from its parents.” True, it is afterwards explained that *chance*, as here used, does not negative a cause. No one supposed that it did; but it does negative any purpose or intelligence in that cause; and Mr. Darwin intimates nothing to the contrary.

There can be no mistake as to the character of such a scheme of cosmogony as this. Creation denied, or pushed back to an infinite distance, and a blind or fatalistic principle watching over a chaos of unmeaning and purposeless things, and slowly eliciting from them, during an eternity, all the order and fitness which now characterize the organized world.

"It cannot be objected that there has not been time sufficient for *any amount* of organic change ; for the lapse of time has been so great as to be utterly inappreciable by the human intellect." Having cited the speculation of the "uniformitarian" geologists upon the long roll of ages, "the millions on millions of years" needed for the explanation of geological phenomena, according to their mode of reading them, it seems a trifling matter for him to ask us to admit, that ages of equal or even greater length may have elapsed, of which we have no record in the rocks ; that, besides the eternity of which we have some sort of geologic evidence, we should acknowledge the probable lapse of another eternity that has left no legible traces behind it, but which happens to be necessary for the purposes of his theory. "Consequently," he says, "if my theory be true, it is indisputable that, before the lowest Silurian stratum was deposited, long periods elapsed, as long as, or probably far longer than, the whole interval from the Silurian age to the present day ; and that during these vast, yet quite unknown, periods of time, the world swarmed with living creatures." "At a period immeasurably antecedent to the Silurian epoch, continents *may* have existed where oceans are now spread out ; and clear and open oceans *may* have existed where our continents now stand."

Such speculations as these appear to be rather exercises of fancy than sober inferences of science. A mere hypothesis of indefinite Cumulative Variation, resting upon analogy in the absence of all direct proof, must be allowed also to *create its own evidence* of the inconceivable lapse of time requisite for its development, instead of drawing that evidence from distinct and independent sources.

Professor Powell, in his advocacy of the Development Theory, argues at length against the doctrine of Final Causes ; but there is only one sentence in Mr. Darwin's volume from which we can infer the nature of his objections to the same doctrine. Speaking of the facts included under the general name of Morphology, he says : "Nothing can be more hopeless than to attempt to explain this similarity of pattern in members of the same class, by utility or the doctrine of Final Causes." Admitting for a moment the correctness of this assertion,

what does it amount to? Surely it will not be maintained, that because Final Causes cannot be *discovered everywhere*, therefore they do not *exist anywhere*. No one will contend, that because we cannot see the use of the rudimentary mammæ in the male, *therefore* the corresponding organs in the female are not adapted to the suckling of her young. As well might it be argued that the rain does no good in moistening the parched earth, because other rain-drops are seemingly wasted by falling into the sea. To the reflecting theist, the general similarity of structure declares the unity of the Creator, without contradicting the lessons taught by special adaptations respecting His benevolence and forethought. To borrow Mr. Darwin's own example: "What can be more curious," he asks, "than that the hand of a man formed for grasping, that of a mole for digging, the leg of a horse, the paddle of the porpoise, and the wing of the bat, should all be constructed on the same pattern, and should include the same bones, in the same relative position?" Of course, by "the same" pattern, "the same" bones, and "the same" relative position, Mr. Darwin means a *similar* pattern, *similar* bones, position, etc.; that is, that the pattern, bones, and position are alike in part, and different in part. Granted, then, that the doctrine of Final Causes will not explain the likeness; will that of Morphology explain the difference? The typical anterior limb is modified in many different ways, so as to become adapted to the wants of animals with different habits; it becomes a hand for man, a shovel for a mole, a paddle for a porpoise, and a wing for a bat. The *similarities* in the pattern or groundwork are referred to one principle in science, Morphology; the *peculiarities* in each special adaptation, to another principle, that of Final Causes. Both the like and the unlike are constituent parts of one structure; they are referred respectively to different, but not contradictory principles; and since neither of these principles is competent for the explanation of the whole work, we see not why one of them should be accepted to the rejection of the other. Guided by the doctrine of Homologies, the comparative anatomist searches for corresponding parts in different animals; guided by that of Final Causes, whenever he finds a marked peculiarity in one part,

he suspects there is a special use or function to be subserved by it ; and by persevering in the search, he usually finds out what this use is. Thus, Harvey found that the valves in the veins and arteries opened in opposite directions ; and assuming that this difference could not be without a use or purpose, he discovered the circulation of the blood. Homologies may be the better guide to systems of classification of parts and members, though naturalists are not agreed upon this point. But the principle of Final Causes more frequently leads to discoveries in physiology, which science, indeed, has been built up almost exclusively by its aid.

The theist believes, it is true, that a Creator of infinite wisdom and benevolence has made nothing in vain ; that there is a use for everything, and a use which it was intended to serve. But he cannot assert that he has discovered this use and fathomed this intention in every instance, without assuming that he possesses infinite wisdom himself. And the naturalist who, because he cannot discover the use, affirms that it does not exist, is guilty of similar presumptuous folly. Looking at the works of finite intelligence, indeed, we find that a purpose is seldom unaccompanied by a want of purpose ; that chance appears, so to speak, as the *residuum* of design. Thus, we often throw a stone, not intending to hit anything with it, but only to toss it out of the way. The throwing was intentional, the hitting was accidental. Every act is attended with several immediate results ; and as all of them are not necessarily in view of the agent at the time, those which do not enter distinctly into his purpose are ascribed to chance. They are caused by him, but not intended by him. A mechanic cannot fashion a machine, an artist cannot chisel out a statue, without leaving behind him a heap of chips, dust, and refuse matter. A chip is struck off at every blow ; but neither its shape, nor the position in which it falls, is designed by the artisan, who is thinking only of the work from which he has pared it away. But because we cannot discern either use or purpose in that heap of refuse matter, we are not to conclude that the finished machine or statue by the side of it is destitute of both. Absence of purpose, then, may often be affirmed of the results of human labor ; but it can never be declared *with certainty*

of the works of creation. Infinite wisdom leaves no *residuum* for chance, and that which is not subservient to one purpose may have been intended for another. If not useful to the organism in which it is found, it may answer some higher object in the economy of creation. It may be a means, *and intended as such*, for the higher education of man, or for the attainment of moral as well as physical ends.

The same remark is applicable for the explanation of another difficulty mentioned by Mr. Darwin. He objects, that "all the contrivances in nature are not, as far as we can judge, absolutely perfect, and some of them are even abhorrent to our ideas of fitness." And he cites, as instances, the sting of the bee causing the bee's own death, the hatred of the queen-bee for her own fertile daughters, and the ichneumonidæ that feed within the bodies of live caterpillars. He might as well have adduced the existence of all the *Carnivora*, man himself included, together with the frequent occurrence of pain and death. We are not wont to hear the old problem respecting the existence of evil alleged as an argument in favor of a novel speculation in zoölogy. But when certain arrangements are declared to be imperfect or unfit, we have a right to ask by what standard they have been tried. Perfect for what end? Fit for what purpose? If the only conceivable intention were to guard the life of every individual bee, perhaps a more effectual means might have been discovered than that of furnishing it with any sting at all. Many insects exist in vast numbers that have no such weapon. Human knowledge, also, is so far from comprehending the whole plan of creation, and all the purposes of its Author, that it seems reasonable to admit the evidences of design where they are so obvious that they cannot be overlooked, and to refer all other cases to our limited means of observation and the imperfection of our faculties. The difficulty, moreover, may be retorted upon the advocates of the Development Theory. As Natural Selection preserves only the useful, and kills out all worthless and noxious Variations, how comes it to have left, in a weapon otherwise so perfect, this one fatal defect, that it cannot be once used without causing the death of its owner?

The necessities of his theory compel Mr. Darwin to maintain that the most complex *instincts*, as well as the nicest adap-

tations of structure, can have been produced only "by the slow and gradual accumulation of numerous slight, yet profitable, variations." But he has seemingly failed to observe that instinct and structure are nicely correlated to each other, and must be so correlated, or the animal would perish. Consequently, the *variations* of structure and instinct must have been simultaneous and accurately adjusted to each other, as a modification in the one, without an immediate corresponding change in the other, would have been fatal. He has also failed to remember, that the highest and most complex instincts are generally found in very low structural forms; for instance, among bees, ants, and spiders, rather than among vertebrates, and in birds more than in mammals. The progress of improvement, then, in the two cases, cannot have been always by equal and corresponding steps; for the development of instinct stopped long ago, while the organic structure has advanced from a spider's up to a man's. It is not a law of nature, then, that a change of the organism should always be accompanied by a change of instinct nicely adapted to it; consequently, the Development Theory can offer no explanation of the fact, that the organism must always have harmonized precisely with the instinct, while the latter was slowly perfected by innumerable variations. It is impossible that so nice a correspondence, maintained between the two during countless independent changes of each, should have been purely accidental or unintentional.

Those who deny that there has been any special act of creation since living forms first appeared upon the earth, are bound, of course, to account for the origin of the human species, just as much as for that of the lowest insect. Mr. Darwin confesses as much when he says that, after the general reception of his system, "psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation. Light will be thrown upon the origin of man and his history." He is bound, therefore, to find the means of bridging over, by innumerable slight gradations, the immense gap which now separates man from the animals most nearly allied to him, — a gap not only between the two structural forms, which, however dissimilar, may still be affirmed to

be of the same kind, but between reason and instinct, where nearly all psychologists are agreed that the difference is in kind, and not merely in degree. As Sir C. Lyell remarks, "the sudden passage from an irrational to a rational animal is a phenomenon of a distinct kind from the passage from the more simple to the more perfect forms of animal organization and instinct."

Here an obvious objection occurs, founded upon the comparative shortness of the time during which man has been a resident upon the earth. "Man," says Lyell, "must be regarded by the geologist as a creature of yesterday, not merely in reference to the past history of the organic world, but also in relation to that particular state of the animate creation of which he forms a part." Even the questionable evidence recently obtained from the discovery of flint knives and arrow-heads in localities where their presence is difficult to be accounted for, does not enable us to ascribe to the human race a higher antiquity than that of the later post-Tertiary formations. Then the interval of time, within which far the broadest chasm which we have to contemplate in zoölogy is to be filled up by innumerable transitional forms, is certainly the shortest which geology has revealed. As the most recent, also, it is one the history of which is most perfectly known. During this period, certainly, it is in the highest degree improbable that innumerable species should have lived and died out without leaving behind them any trace of their existence. The few fossil monkeys that have been discovered are not so near approximations to the human form as several anthropoid species that are now living. How, then, can man have been developed during this short epoch, by the indefinitely slow process of Cumulative Variation and Natural Selection, out of a monkey? and where are the countless extinct types that should mark the steps of his progress? How many varieties must have existed as strict transitional forms to fill up this broad gap, — to say nothing of the greater, infinitely greater, number of variations which were not improvements, but which must also have appeared and died out under a liability to change having no direction or purpose but that of chance! Geology can find no traces of them. The latest chapter of the Stone Book, which is far the best

preserved, and which ought to be nearly filled with variations upon this single theme, does not record a single form intermediate between man and the chimpanzee.

Moreover, if reason has been developed out of instinct, these innumerable forms between the *Quadrumana* and the *Bimana* must have had an enormous advantage in the Struggle for Life over their less intelligent competitors, so that the total disappearance of their remains becomes still more inexplicable. Bones of their brute contemporaries, hyenas, bears, rhinoceroses, elephants, and even a few monkeys, are found by the cart-load in many localities. But a crowd of half-reasoning animals, developed out of oranges, chimpanzees, or gorillas, furnished with tools and weapons, and capable, if we may judge from their other semi-human attributes, of adapting themselves to a wide range of circumstances, and which ought, consequently, to have multiplied without stint, because they were sure to triumph over their brute rivals in every contest for the ground or for food, have yet perished so entirely, that not a vestige of their skeletons has been anywhere discovered.

The doctrine that reason has been developed out of instinct, depends entirely upon the assumption that these two faculties differ from each other in degree only, and not in kind. If psychology is to be placed upon a new foundation, as Mr. Darwin assures us, "that of the necessary acquirement of each mental power and capacity *by gradation*," there must be a conceivable transition from instinct to reason through a number of steps, every one of which must be an improvement. Here we are at once met by the difficulty, that the power of instinct, in many cases, quite transcends that of reason; if it differs from human intelligence in degree only, it is in these instances undoubtedly the superior. Man may go to school to the spider, the ant, the wasp, and the bee, but he can never equal his teacher. Compare the habitations, the nets, and other structures of these insects, with those of the lower savages, such as the Hottentots and the native Australians, and say which are the more artistic and the more nicely adapted to their purposes; especially when we add the necessary qualification, that the insect works without any tools except those which are parts of its own body. Man has had bitter experience enough in the matters of gov-

ernment and social organization, and the wisdom of thirty centuries has been exhausted in pondering upon the several problems of social philosophy; but he is still unable to form a society which, in point of orderly arrangement, harmony, and effective coöperation for the general good, even approaches the excellence of a hive of bees. Since the latest form of the Development Theory allows no variation to be preserved and perpetuated, except it be an improvement, since Natural Selection inevitably kills out every change except it be for the better, how comes it that human reason has deteriorated in all these respects ever since it began to be built up from the narrow foundations of an insect's instinct? It is no answer to say, that reason is still immeasurably the superior in the number, comprehensiveness, and ductility of its endowments, and especially in those powers of adaptation and invention by which it is fitted for all emergencies. The question still remains, Why, if it has improved in so many respects, has it deteriorated in any?

But the difficulty of accounting for the transmutation of instinct into reason becomes vastly greater, when it is remembered that a leading characteristic of the former is, that it admits of no variation whatever, — that, as far as human observation has extended, it is absolutely unchangeable, both in the individual and in the race. Instinct, it is true, has a certain degree of *pliability*, enough to provide for the ordinary and perpetually recurrent emergencies of the special occasion for which it was created. Otherwise, the faculty would very seldom answer its purpose, or be competent for its destined work. Thus, the spider which always fashions a regular polygonal web, as it can seldom or never find a nearly circular opening in which to suspend it, must be able to change the length and direction of the suspending threads, so as to hang the structure easily and economically in an opening of any shape, triangular, quadrangular, or altogether irregular, such as it may best find. But the absolute invariability of the instinct appears even here, in the fact that the web of this spider is always polygonal and curiously symmetrical, though so much contrivance is thereby needed to suspend it with proper stiffness; and though a triangular web, such as is al-

ways spun by an allied species, would remove all difficulty and answer every purpose. The range of this pliability, also, is always confined within very narrow limits. The instinct is invariably pliable to the same extent, and that a very limited one. Bees and wasps build cells very nearly on the same pattern, which is curiously elaborate and symmetrical; they even change this pattern a little, so as to fit together the cells of different sizes which they need, or to hang securely the topmost or innermost row of cells to the top or side of their habitation; always returning, however, to the typical form of the cell as soon as possible. Bees build invariably with wax, and wasps invariably with a paper-like substance, though an interchange of these materials would often be convenient, and a capacity of changing the material on an emergency would certainly conduce to the animal's preservation.

A true *variation*, such as this Theory requires, would be the manifestation by an individual in the wild state, or undomesticated, of some feat, quality, or degree of instinct, however slight, totally unlike anything that had been manifested by its fellows. Of such variation the observations of naturalists have not afforded us a single instance. The architecture and internal economy of a beehive or a wasps' nest, so far as known, marvellously complex and elaborate as they are, have not varied by a hair's breadth since the days of Aristotle. Bees have been carefully watched by man for over two thousand years; they have been carried by him to a vast number of localities beyond those originally inhabited by this insect. The whole continent of America has been populated by the ordinary hive-bee from Europe. Thus the experiment, whether change of circumstances might not possibly induce variation, may be said to have been fairly tried. There are from 15,000 to 20,000 bees in every healthy hive; and the number of their hives, taking all parts of the world together, almost defies calculation. This enormous stock of them has to be renewed at short intervals, as the bee's life does not usually exceed a single year. And yet the typical bee cell, with all its marvellous symmetry and complexity, finished with the precision of a 100,000th part of an inch, has not changed the length of one of its lines since it first excited the astonishment of man.

With this known amount of invariability, how great is the time that would be requisite for developing the instinct of a bee into human reason ?

But here it is necessary that instinct should be sharply distinguished from some of the other powers with which it is generally accompanied. No one denies that the brutes have certain mental endowments in common with men. They have appetites, propensities, desires, affections, memory, simple imagination, or the power of reproducing the sensible past in mental pictures, and even judgment of the simple or intuitive kind. They compare and judge, as when the dog or cat decides correctly what height or breadth it can safely jump, or how large an orifice must be to admit the passage of its body. But they cannot judge by inference, or through the intervention of a third term ; that is, they cannot reason. They cannot generalize their experience, and thus form premises from which many conclusions can be drawn. Their judgment, as intuitive, is always of the particular case presented to their senses, and never as an inference from a general rule. The only end which they can pursue, or even contemplate, apart from the guidance of instinct, is particular and immediate, dictated by the appetite or impulse of the moment. Hence, they cannot combine means for the attainment of a future or general object, and thus their modes of operation are never altered or improved.

Instinct is the power given to compensate for these deficiencies, which would otherwise be fatal to life or destructive of the species. It appears as a substitute for reason, not as a lower degree of it ; it answers the same purpose, but by totally different means. Instinct is the performance by an animal of some act (the construction of a nest or cell, or the laying of a stratagem for catching its prey) which man could not perform without intelligence or reason, properly so called ; that is, without experience or instruction, the observation of effects, the induction of a rule or law from them, and the consequent future choice and adaptation of means to ends. This act the animal demonstrably performs without either experience or instruction, but just as blindly as the bird tucks its head under its wing when going to sleep, without knowing why. The

act does tend to some useful end, though the animal knows not of it. Foresight it has none, unless it be the foresight of a god rather than a man; for human prescience is nothing but the reflection of the past upon the mirror of the future. Neither reason nor instinct supplies an object of endeavor, but only points out the means of attainment, the former relying exclusively upon experience, the latter appearing, at least to human observation, to be guided by inspiration. A blind propensity induces the duckling to take to water; instinct teaches it how to swim. The migratory bird is urged by a vague impulse at the proper season to change its country; instinct turns its flight in the right direction. Surely it would be no improvement in either of these cases, no development of a higher faculty out of a lower one of the same kind, if reason were substituted for instinct, the tardy and uncertain teachings of experience for the instantaneous and unerring guidance of inspiration. That power or faculty, call it what we may, bears not the remotest semblance of human reason which teaches a wasp, born only after the death of its parents, to store up food of a kind which it never uses for itself, for the use of its young which it is never to see. Neither a propensity nor an appetite is an instinct, though all three are equally blind. For man also has both propensities and appetites which need not the promptings of intellect, but are awakened before reason is born in him. Tastes, smells, and sounds are pleasant or odious to him as a matter of original constitution, and not because his reason tells him that these ought to be sought, and those to be avoided.

This is not an arbitrary definition or limitation of the meaning of the word *instinct*; for if, as Mr. Darwin says, human reason is to be developed out of the brute's endowments, be these what they may, — if man is the son of a monkey, and the grandson of a horse, and the remote descendant of an oyster, — then reason must grow out of something which has at least some characteristic of reason, or which does the work of reason; and not from something which even now, in man, has no resemblance to intellect properly so called, and no dependence upon it, and which appears fully even in an idiot. Tell me that reason has been developed out of instinct *as it has now*

been defined, and at least I know what you mean ; but to say that it has been evolved from an appetite or a propensity, is as incomprehensible as to allege that an idea has been developed out of a football. No conceivable variation of a football will approximate it to reason. Mr. Darwin's supposed cases of incipient, altered, or lost instincts are, at best, only instances of the development or disappearance of blind impulses or appetites, which relate only to the selection of ends to be obtained, and not to devising new means, or improving old ones, of obtaining them. He has not adduced one case of the variation of instinct properly so called.

The only actions of man which seem to have any claim to be considered as instinctive, are those prompted by the feeling of modesty or shame. This *feeling itself* is not an instinct, any more than the emotions of pride, emulation, or anger. But *the actions* to which it points are not merely natural manifestations of strong emotion, but are peculiar and definite, as if devised by reason for the attainment of a specific purpose. All the lower animals gratify each of their appetites, as nature prompts, without stint, and without any apparent desire of cover or concealment. Man alone gratifies one of them only with every precaution of secrecy, and carefully provides a covering, not needed for the purposes of protection or warmth, for certain portions of the body. No tribe of savages has ever been discovered so rude and debased as to manifest complete indifference respecting such precautions and coverings. The adult females are always provided with some clothing, however slight, the arrangement of which indicates the purpose for which it is worn ; and if, in a very few instances, adult males are found unprovided with similar coverings, there is reason to believe that extreme poverty, rather than indifference, is the cause of the neglect. The fact, that children under the age of puberty are often suffered to go entirely nude, also indicates the purpose of the covering. However slight the garment may be, — a mere girdle with the natives of the South Pacific islands, or a narrow cloth around the loins, as with the savages of Central Africa, — travellers relate that it is guarded with much care and jealousy, and that the removal of it seems to cause as much pain and shame as would result from entire

exposure among more civilized races. Reason and experience could not have indicated to savages the necessity or propriety of this slight covering; as no reason can be assigned for it, apart from the sacred instinct by which it is peremptorily enjoined. If this be an instinct, it is one which, unlike all other instincts, does not conduce to the preservation, — that is, to the physical safety, — either of the individual or of the race. Man might live in this respect as the brutes do, and live as long and as well. Call it instinct, propensity, or what we may, the only conceivable purpose for which it was implanted in man is a moral purpose, as a safeguard for the right development of his ethical nature. Hence it is, that the entire loss of it, which sometimes results from extreme profligacy, is shown by experience to be equivalent to utter moral degradation. This view of the subject, it may be added, derives some weight from the allusion to it in the history of our first parents, whether that history be regarded as revelation or tradition. Man has no instincts to keep guard over his physical well-being; reason, enlightened by experience, and stimulated by affection, is abundantly sufficient for this end. But a moral instinct, indispensable for the preservation of the purity of his life, and thus auxiliary to conscience, is his never-failing endowment.

Any form of the Development Theory rests ultimately upon the assumption, that the origin of species by a direct act of creation is inconceivable, or at best grossly improbable. Mr. Darwin, as already mentioned, speaks with wonder of those who are “no more startled at a miraculous act of creation than at an ordinary birth.” And Professor Parsons, in a communication upon the same subject to this Academy, declared that, whatever difficulties might impede the reception of the transmutation hypothesis, “I should accept them all unhesitatingly, rather than the notion that the first horse, or dog, or eagle, or whale flashed into being out of nothingness, or out of a mass of inorganic elements which had been drawn together in due proportion for that purpose.”

In opposition to this view, it is here maintained that a direct act of creation is no more inconceivable, and not inconceivable in any other sense, than an ordinary birth. It ex-

cites more wonder, it is true; but only because it is less frequent, or because it is believed to take place more abruptly. A new individual — a new being — is the result in either case; but to assert that the beginning of this new existence is more explicable by ordinary generation than by direct creation, is equivalent to saying, (if the folly and irreverence of the expression may be pardoned,) “that a horse should create a horse is conceivable; but that God should create a horse is inconceivable.” The beginning of all life is in a nucleated cell of microscopic size. The original formation of such a cell, and the subsequent enlargement or rather multiplication of it by the epigenesis of other similar cells, are distinct acts of creation properly so called, whether preceded or not by a generative union of the parents. That the generative act should be ordinarily followed by the vivification of such a cell, is a law of nature, which, like other natural laws, does not explain the phenomena, nor throw any light upon them, but merely describes and classifies them; and if naturalists were once led to believe the union of two sexes to be a necessary or invariable antecedent of the vivification, the discovered fact of parthenogenesis has convinced them of their mistake. The first appearance, then, of this living cell, is an indubitable case of an organized individual at once “flashed into being,” not indeed “out of nothingness,” but “out of a mass of inorganic elements drawn together in due proportion for that purpose”; and special or miraculous creation, which appears so incredible or inconceivable to the advocates of the Development Theory, is in fact constantly going on all around us. Whether we call it creation or ordinary generation, the process — the mode in which inorganic particles are suddenly bound together into an organic living whole — is wholly inexplicable. Science throws down her microscope before the process in despair. But inexplicable as it is, we are not able to deny that it is a law of nature which is perpetually verified before us. We cannot tell *how* a blade of grass grows; but we do not therefore affirm that it does not grow.

No one who understands the case will assert, that either the scale on which the phenomenon takes place, or the frequency of its repetition, or the length of time within which it is com-

pleted, is a radically distinguishing circumstance which prevents us from identifying ordinary reproduction with direct creation. Frequent repetition, indeed, wears out wonder; but it does not make the process one whit more explicable than if it occurred only once in a millennium. One microscopic germ may be slowly developed into a giant pine, which may reckon its years by centuries: and another may give birth to an insect that completes its whole cycle of being in a single season. But science knows as little of the process in the one case as in the other, and justly classes them both under the same name of generative development. "If an animal or a vegetable," says Dugald Stewart, "were brought into being before our eyes *in an instant of time*, the event would not be in itself more wonderful than their *slow growth* to maturity from an embryo or from a seed. But on the former supposition, there is no man who would not perceive and acknowledge the immediate agency of an intelligent cause; whereas, according to the actual order of things, the effect steals so insensibly on the observation, that it excites little or no curiosity, excepting in those who possess a sufficient degree of reflection to contrast the present state of the objects around them with their first origin, and with the progressive stages of their existence."

DISEASES AND MALFORMATIONS NOT HEREDITABLE.

FROM THE PROCEEDINGS OF THE AMERICAN ACADEMY FOR JANUARY, 1861.

THERE has been an increasing tendency of late years, particularly among speculative philanthropists and naturalists, to lay great stress upon the supposed hereditability of peculiar and abnormal traits of bodily and mental organization, especially of mental disease, and to insist more and more upon the certainty of their transmission by descent. It has even been proposed to prohibit by law the intermarriage of persons who have mental or bodily defects or diseases which might be transmitted to their offspring. And as to insanity, there is too much reason to fear that persons have been actually driven mad through the fear, which has been carefully inculcated upon them, of having inherited insanity. It will be admitted, that, if there is anything which can foster and rapidly develop some latent tendency towards mental disease, it is dreading, and brooding over the dread, of that great calamity, regarded as an inevitable event, which must sooner or later happen. In the opinion of many, crime and sin are no longer imputable to individual men and women, but to what the lawyers call "the act of God," which entailed upon the offenders inevitably a wicked temper, a perverted will, or a diseased brain. The only proper name to be given to this doctrine is *physiological fatalism*. It rests upon a perversion of one of the darkest saying of the old Jewish Scripture, that the sins of the fathers shall be visited upon the children, even to the third and fourth generation; — a seemingly harsh doctrine, though, in the meaning which was probably intended, it is certainly true; and it is one which, at any rate, is not so terrific as that perversion of it, which teaches, that not merely the sins, but the

congenital defects and diseases, implanted in us before birth, shall be visited upon our innocent offspring, not for two or three generations only, but for all future time.

It appears to me that the assumed evidence upon which this theory rests is unscientific and unsatisfactory, and can be confronted by a great amount of testimony leading to an opposite conclusion. We may begin by admitting, or taking for granted, every *fact* which is commonly adduced in its support, — excluding, of course, such a statement of that fact as may involve any theory respecting its nature. Thus, it is a fact that insane persons can generally find among their ancestors, or their relatives in the ancestral line, one or more persons who also have been insane. The illogical, because hypothetical, statement of this fact is, that the former *inherited* their insanity from the latter. It is also a fact, that children often bear a certain measure of resemblance, in body, mind, or character, to their parents or grandparents; and the hypothetical statement of this fact is, that they have inherited these traits.

Now, one of three suppositions must be true; — either, 1. there is a law of nature that bodily and mental peculiarities shall always be transmitted by inheritance; or, 2. there is a law that they shall not be so transmitted; or, 3. there is no law about the matter, and it is mere accident whether parental or ancestral peculiarities reappear in the offspring or not. The physiological fatalists maintain the first of these suppositions; my own belief is in favor of the second; but as against the fatalists, it is enough to substantiate by satisfactory evidence the third.

The mistake of those who favor the doctrine of hereditary descent arises from the common error, — an Idol of the Tribe, as Bacon calls it, — which consists in regarding only the affirmative cases; “and though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or by some distinction sets aside and rejects.” “Such is the way of all superstition,” Bacon continues; “but with far greater subtilty does this mischief insinuate itself into philosophy and the sciences. It is the peculiar and perpetual error of the human intellect, to be more moved and excited by affirmatives than by negatives; whereas,

it ought properly to hold itself indifferently disposed towards both alike. Indeed, in the establishment of any true law of nature, the negative instance is the more forcible of the two." Dr. Johnson pithily described this popular fallacy, when he said, that the one dream which comes to pass is remembered and quoted, while the ninety and nine which do not come to pass are forgotten. Just so, one case of an insane child or grandchild, nephew or niece, of an insane person, is quoted as proof of the doctrine of hereditary transmission; while the twenty other offspring of the same person, who never showed a trace of insanity, are forgotten. It is difficult to adduce evidence on this point; for while it is comparatively easy to trace back the pedigree of a madman, and find insanity somewhere in his family, either in the direct or collateral line, since statistics prove that at least one out of a thousand in the whole community suffer more or less from this disease, — it is not so easy to trace the line forward, to lay bare the history of a whole family, and to prove that no one of them, at any time or in any degree, has suffered from insanity. Only in the case of a prominent historical family, where all the facts are on record, or are generally known, is such evidence attainable.

Fortunately, there is one case of this sort that bears directly on the question. George III. may be said to have been constitutionally insane, the malady breaking out several times in the course of his life with great violence. In 1788, in 1801, and again in 1804, the disease appeared, each attack incapacitating him for the exercise of his royal functions for several months. In 1810, there was a fourth and final attack, the disease then darkening into hopeless imbecility, and continuing for ten years, the remainder of his life. It is now stated, also, though the fact was not divulged in his lifetime, that he had an earlier attack, in 1764, when for some weeks he was under restraint. But if we trace back his lineage for six generations, as far as James I. of England, not one of his ancestors can be found to have ever suffered from this complaint. Besides, he had seven brothers or sisters, and seven uncles or aunts; and as several of these married and had families, he had a goodly number of cousins and of nephews or nieces. Yet it does not appear that one of these ever showed a trace of insanity. Evi-

dently, then, George III. did not inherit the disease. Did he transmit it? Here the evidence is equally abundant and satisfactory. This insane king had fifteen children; and as many of these had families, either legitimate or illegitimate by English law, there was a crowd of grandchildren. The Duke of Clarence alone had, by Mrs. Jordan, ten children. A very hurried search will enable one to enumerate fifteen children, twenty-two grandchildren, and, including the children of the present Queen, eighteen great-grandchildren, — say, in all, fifty-five descendants. [At present, 1880, the number is increased at least to seventy-five or eighty.] Yet in this large number there does not seem to have been *one* undoubted case of insanity; and as kings and princes live in glass houses, if there had been one such case, we should probably have heard of it. Not one *undoubted* case, we say; for there is a doubtful one. The oldest of the Fitz Clarences, created Earl of Munster, committed suicide in 1842; and as he had shown great despondency for six weeks before his death, so that a physician was at last called in, a coroner's jury, if one had sat in his case, might have brought in a verdict of insanity; and the physiological fatalists, remembering his grandfather, would probably have called it a case of hereditary insanity, overlooking the fifty-four or seventy-four other descendants of George III., who have appeared as sane as other people.

One such example as this of George III. appears conclusive against the doctrine of the *necessary* hereditary transmission of mental disease. We thus exorcise the terrific phantom which, as already said, has probably driven many persons mad. There is more than one prophecy, the mere announcement of which has caused its own fulfilment. But the case is not a solitary one. Observation among the families of my own acquaintance, *always made on the principle of collecting the negative as well as the affirmative instances*, have satisfied me, that the rule — that is, the law of nature — is *against* the hereditary transmission. If there are apparent exceptions, the *majority* of the descendants manifesting the same disease as the parent or ancestor, they are explicable through the action of sympathy, unconscious imitation, or exaggerated fears proceeding from the cause just mentioned. Cases enough can be cited of the recur-

rence of the phenomenon from such causes, wherein the persons concerned were not related by blood, so that inherited disease was out of the question.

Thus, up to 1839, there had not been, for sixty years, a case of suicide by precipitation from the top of the London Monument. In that year, a young woman named Moyes threw herself off from it and was killed. Within three months, a boy only sixteen years old, whose previous conduct had shown nothing unusual, jumped off with the same result. To prevent another case, the keeper was required to accompany every person who ascended the stairs. But before the year was ended, another young woman, never before thought to be insane or to have any cause to wish for death, contrived to elude him by going to the other side of the balcony, where she also jumped off and was killed. Then, at last, the iron railing of the balcony was carried up and united to the stone-work above, making a sort of cage which had no exit except by the stairs. If these three suicides had been brothers and sisters, their case would have been put down as a strong instance of family insanity. Then may not the repetition of suicide, or other insane acts, by members of the same family be the result of this sympathetic propensity, or blind imitateness, roused into keener action by the example being set near home, rather than the result of *inherited* mental disease? If so, how forcible is the lesson that we ought in every way to discourage and disprove this doctrine of the hereditability of insanity! Other cases are not wanting. One was reported to the Paris Academy of Medicine, that, a soldier at the Hôtel des Invalides having hanged himself on a post, his example was soon followed by twelve other invalids, and only by removing the fatal post was the suicidal epidemic at last arrested.

Thus far I have treated only of insanity. But the question is a broader one. Do any peculiarities of mental or bodily organization, appearing for the first time in one generation, tend to perpetuate themselves by the law of hereditary descent? Besides the *specific* traits, which every animal has in common with the species to which it belongs, it has also *individual* traits or peculiarities, always prominent enough to enable us easily to distinguish every individual from its fellows of the same kind,

even if they are the offspring of the same parents, and sometimes so strongly marked as to deserve the name of monstrosity or disease. Does nature tend to perpetuate or efface this distinction between specific and individual traits? The question is one of great importance and the highest generality, affecting the basis of zoölogical science. If this distinction is feebly marked and transitory, then there is no fixed system or plan in the animal kingdom, and nothing for science to do except to chronicle a succession of fleeting peculiarities and shifting boundaries. If, on the other hand, the distinction is broad and stable, if what Blumenbach calls the *nisus formativus* necessarily tends to perpetuate the species by restricting the law of hereditary transmission to the specific traits, and excluding it from the individual peculiarities, then the dominion of law, the unchangeable purposes of the Creator, extend alike over the inorganic and the organic kingdoms, and nature becomes one consistent, permanent, and intelligible whole. Undoubtedly apparent exceptions occur, through a complexity of circumstances which science cannot always unravel. Sometimes a specific trait is wanting, and the result is a monstrosity, a *lusus naturæ*; but nature takes care to kill out such monsters, usually in the first generation. Sometimes an individual peculiarity of the parent, not so strongly marked as to deserve the name of a monstrosity, reappears in the offspring. But such cases are infrequent, exceptional, and, at the utmost, not continued beyond two or three generations. They are casual repetitions, such as are always possible in the perpetual shifting and shuffling of individual traits; they are not the results of hereditary transmission. Otherwise, — if a law of nature favored the transmission, — all individual peculiarities would successively disappear, being merged in specific traits, and each new birth would present successively a more perfect copy of its parent, until at last, all differences being effaced, individuals of the same species could no more be distinguished from each other, than a heap of silver coins freshly struck from the same die at the mint. But God's creative processes are not thus mechanical; infinite variety, no less than perfect order, is a law of nature.

The first argument, then, against the doctrine of hereditary

resemblance, is founded on this admitted fact of the marvellous variety in nature. Among millions of human faces, no two can be found so nearly alike as to be mistaken one for another. The dividing line is strongly marked and permanent between the personal or individual traits that are thus infinitely varied, and the specific traits which are reproduced with great, but not absolute, uniformity. The most striking proof that there is a law of nature prohibiting the repetition of abnormal forms is found in the fact, that, as the most fertile source of such forms is from the crossing of distinct races, nature invariably makes the product of such crosses more or less sterile or short-lived.

How came it, then, ever to be supposed, that nature favors the hereditary transmission of personal traits of mind, character, and external form? From the popular fallacy, already exposed, which leads the observer to fasten upon the few affirmative, to the exclusion of a crowd of negative, instances. The different features of mind and body are very numerous, and every one of them may show likeness or unlikeness with the corresponding feature in the parent. Analyze any case of supposed strong resemblance, and it will be found to consist in one or two features only, to the exclusion of six or eight others, which are wholly unlike those of the parent. Thus, a strongly marked nose, together with eyes of a peculiar shape and hue, are enough to make out what is called a marked case of family likeness; though mouth, chin, forehead, complexion, hair, outline of the face, and shape of the head may be as unlike as if they belonged to a stranger by blood; and though even eyes and nose of the same pattern may be found, almost as often as we choose to look for them, among the community at large. Again, as likeness to a grandparent is held to prove hereditary transmission just as much as likeness to the immediate parent, and as everybody has at least two parents and four grandparents, there is no cause for wonder, if, among these six progenitors within two generations, a counterpart should be found for every feature of the offspring, though accident, and not inheritance, formed the law of distribution. For, excluding malformation, there are not more than half a dozen varieties of each feature which are strongly marked

enough to constitute a ground of likeness. Thus, a nose peculiar enough to be a recognized point of likeness, and yet not deformed, must be decidedly either aquiline, Roman, Grecian, flat, pug, or a *nez retroussé*. Here are but six possible forms, and, according to the law of chances, we might expect to find a counterpart for any one of them among the six progenitors. It is because resemblance between parent and offspring is found much less frequently than, according to these considerations, we should have a right to expect it, even if the forms were distributed at random, or without any law at all, that we are led to believe the law of nature, if there be one in the case, favors unlikeness rather than resemblance; or that Nature *takes care to vary* her work, as she certainly does with the leaves of the same oak-tree, among which you may hunt for hours without finding two whose indented outlines are at all similar.

But supposed family likeness more frequently consists in the *general expression of the countenance*, in which respect a large family often bear a marked resemblance to each other, while their features, taken separately, are wholly unlike. This similarity of expression, however, is not congenital, but is gradually superinduced upon Nature's work, through living together a long while in sympathy and confidence, under similar influences and education, whereby, as is often remarked, husband and wife, after a long life of matrimony, come to resemble each other. And if this is the case even with adults, who come together only after age has given rigidity to the face and stereotyped its expression, how much more readily will the plastic features of infancy and childhood yield to similar influences and adopt the family pattern. Hence it is, that this likeness of expression generally cannot be seen in early infancy, and appears very faintly at first, but deepens and strengthens as the child advances in years. Through the same cause, also, the handwriting of the different members of the same family is often strikingly similar, though they may have learned how to write from different teachers; and probably no one will maintain handwriting to be hereditary.

All that has been said of the external features is applicable, also, *mutatis mutandis*, to traits of mind and character. The

hereditary transmission of the latter is even less probable than of the former, on account of the acknowledged almost immeasurable diversity of mental traits, and because the few points of similarity can be more probably referred to the influence of education, imitation, involuntary sympathy, and other like bonds which draw together and assimilate parent and child, however originally unlike. But in spite of these causes, all tending to create ultimate resemblance, we still find genius and stupidity, temper, affection, and taste so very unequally and capriciously distributed among members of the same family, that the diversities can be attributed only to nature's own ordinance established for this very purpose. Analyze any case presented as evidence of the opposite theory, and we see more plainly than ever the error of laying stress upon the affirmative points, while the negative instances are overlooked or forgotten.

Mr. George Combe cites an author who attributes the fatality which attended the House of Stuart "to a certain obstinacy of temper, which appears to have been hereditary and inherent in all the Stuarts except Charles II." But this perverse wilfulness seems more probably attributable to the education received, every Stuart being trained by a Stuart, and by an Anglican clergy then fanatically attached to the dogmas of the divine right of kings, and the subject's duty of passive obedience. Charles II. had his training in the hard school of adversity and exile, where he became more pliant. But how many other points of resemblance can be found in the succession of Stuart kings? Compare the first of them who sat on an English throne, the slobbering, pedantic, cowardly, fondling James I., with his grave, decorous, and melancholy son, treacherous as a prince, but rigidly moral as a man, and dying at last the death of a martyr and a saint. Or compare this martyr-king with his good-for-nothing though good-natured son, Charles II., or the latter with his brother, the stupid and cruel bigot, James II. Only in "the good Queen Anne," as she was sometimes called, weak and prejudiced, but motherly and fondling, and much under the influence of favorites, do we find a reproduction of some characteristic traits of her great-grandfather, James I. Take any other line of European

kings, and as great diversities of character and ability may be found among them as among the Stuarts. On the whole, the doctrine of the hereditary transmission of mind and character may be said to be contradicted by all history, as well as by every day's experience.

THE PSYCHICAL EFFECTS OF ETHERIZATION.

FROM THE SPECTATOR, LONDON, DECEMBER 27, 1873.

ON October 5, 1872, having to undergo a surgical operation, I was narcotized with sulphuric ether. The chief purpose in subjecting myself to this treatment was, of course, to escape pain ; but I also wished to observe as accurately as possible the psychological results of the experiment, and especially to endeavor to remember which of the mental faculties was suspended, in what order the successive interruptions of their normal action took place, and what was my state of consciousness while some, but not all, of the mental powers were thus paralyzed. Of course, I did not expect to observe and remember all that passed in my mind during the trance, as the narcotic action would certainly impair memory, and during a portion of the time might destroy it altogether, though this did not seem probable. But by fixing firmly in the mind, the moment the operation began, this purpose to observe, and by recalling it as soon as possible after the partial or entire restoration of consciousness, there was a good chance that some interesting results might be noticed and chronicled. I informed the operator beforehand of my intention, and requested him to take good care that enough ether should be administered to produce complete anæsthesia. Also, as it is usual to apply the ether slowly at first, bringing the sponge gradually close to the nostrils, there was no doubt that at least the initiatory stages of the experiment could be remembered.

Soon after the inhalation commenced, my sight became impaired. Clouds of white vapor seemed to roll before my eyes, and rapidly to come nearer and thicken, till I could no longer see any object or color whatsoever. But neither then, nor afterwards, was there any sensation of blackness or darkness ; it

seemed all the while as if I was in the centre of a very luminous white cloud, no outlines being apparent in it, and no estimate being formed whether it was near or remote, although there was an indistinct impression of wreaths or folds of it rolling over each other, or of the whole mass slowly gyrating round a centre. Next, there seemed to be a light, whirring sound in my ears, which, when it became continuous, made me suppose that I was already deaf; but in this it soon appeared that I was mistaken, as the sense of hearing was not entirely lost till two or three moments afterwards. At about the same time, I ceased either to taste or smell the ether, and the process of inhaling it, which at first produced a choking sensation, became easy and natural. Wishing to preserve consciousness after sensation had ceased, and finding it difficult or impossible to speak, I swung my arm round so as to touch the operator, as a hint to him to take away the sponge. He did not heed me, and I repeated the signal. Then he spoke in reply, but though close to me, I could not distinguish a word that he said, his voice sounding hollow and inarticulate, as if coming from a great distance. This proved, however, that the senses of touch and hearing were not yet entirely benumbed, for I had a faint sensation not only from his voice, but also from my hand striking his knee. A moment later, however, I ceased to have any feeling whatever; for then, as I afterwards learned, began a series of cuts, pulls, and wrenches, lasting about three minutes, which, if my nerves had been in their ordinary state, would have occasioned exquisite pain. But I was entirely unconscious of them, and did not even know that the hand or the instruments of the operator touched me. I forgot even where I was, what occasion had brought me there, and what had been done to me. In short, memory had entirely gone; but all the while I was perfectly conscious, not only of my own existence, but that I was in some abnormal state, into which I had been brought by my own act, or at any rate with my own free consent. It seemed that something fearful had happened, — that I had passed into another state of existence, and its doors had irrevocably closed behind me. Not terror, but a deep feeling of awe and regret came upon me, — regret that I had allowed myself to cross some boundary line into another world, from which there

was no return. My mind, far from being inactive, seemed to be in a state of the utmost tension of its powers of thought and feeling. I was conscious even of the lapse of time, and it seemed as if years passed while I was thus reflecting upon the consequences of my own act in passing out of some former life, of which, however, I had no distinct remembrance. The thought of making any physical exertion to break the spell never occurred to me; for, indeed, I had forgotten that I had a body. Neither did I make any mental effort either to change the course of thought to some other topic, or to repress the vivid emotions which affected me so strongly. Indeed, volition as well as memory seemed to have departed. I was conscious only of self, — that is, of my own being, — of quick, but passive or involuntary thought, and of deep feeling. This extreme tension of the mental faculties tends to explain what would otherwise be unaccountable, — why I should afterwards remember perfectly what were my thoughts and feelings while in the trance, though, during the dream itself, I had no recollection of the circumstances which preceded it and caused its occurrence. The process of waking again into full life was not gradual, but instantaneous. At once the scales seemed to fall from my eyes and memory, and I heard the operator giving me some directions concerning the flow of blood. I immediately remarked to him, “Doctor, I have passed years in this unnatural state.” He laughed as he showed me his watch, which proved that I had been under the influence of ether about five minutes.

The following is a summary of the conclusions which I think may be drawn from this experiment: —

1. When the anæsthetic trance is coming on, the sense of sight is the first to leave us; next, the senses of taste and smell depart; and lastly, those of hearing and touch.

2. Along with the paralysis of the last of these special senses, we lose also what may be called the general or organic sense, diffused through the whole body, through which we are made conscious of heat and cold, of affections of the œsophagus and alimentary canal, of muscular fatigue, of the pressure of our own weight on the feet or the sitting part of the body, and of the lesion of any portion of the animal frame.

3. As soon as the senses are entirely benumbed, there is a

total loss of memory ; and at the same time, as it seemed to me, the power of volition also departs, and we cease to will.

4. The loss of all these faculties is so far from depriving us either of self-consciousness, or of the rapid succession of involuntary thought, or of the capacity of strong emotion, that I think these are stimulated into unusually intense action.

5. Ordinary sleep differs from the anæsthetic trance in at least one important respect. In the former, sensation is not suspended, but is only more or less benumbed. Many sleepers awake when there is the slightest noise in the room, or even from a light touch of the hand. Others are roused with more difficulty, but even these will generally make a slight movement to avoid irritation or tickling of some part of the body. Many are wakened even by the hum or a bite of a mosquito. Sleepers even distinguish the character of different sounds, as an unusual though comparatively slight noise will instantly awaken them, though their slumbers are undisturbed by much louder sounds which they are accustomed to hear every night. Again, the dreams of the sleeper usually evince some recollection of familiar persons, places, and objects, so that there is no total loss of memory. In our dreams, also, we even *will* to make some effort to avoid an imagined danger, though such volition does not usually succeed in moving the limbs.

6. Neither does anæsthesia resemble a swoon. Twice in the course of my life I have fainted entirely away, and each time, as I distinctly remember, there was a complete loss of consciousness. A sufficient dose of alcohol taken into the stomach *may* produce the same effects as inhaling ether ; for I suppose a person who is what is commonly called dead-drunk neither feels, hears, nor remembers. But I have no evidence to offer on this point, as I do not remember ever having tried the experiment.

7. The living, of course, can never *know* what immediate effect is produced on the mind by sudden death. But the paralysis of the faculties of sensation, memory, and volition during the anæsthetic trance seems to be as perfect, for the time, as any which could be produced by the stroke of the axe when a person is guillotined. Yet the experiment now detailed seems to prove that, after these three faculties are thus entirely par-

alyzed, self-consciousness and the capacity for contemplative thought and strong emotion may not only remain unimpaired, but may even be roused to unusual activity. This capacity, moreover, seems to depend upon the brain alone, for it continues unaffected when, in consequence of some injury to the upper part of the spine, the whole sensitive organism below the neck is completely paralyzed. Then it appears not only possible, but extremely probable, that self-consciousness may remain, at least for a considerable time, (since the anæsthetic trance can be indefinitely prolonged,) after the head has been severed from the body. I do not see why it should not continue even after the brain has decayed, and been reduced to its constituent chemical elements; for although during this life some molecular change in the brain, some "burning of phosphorus" there, may be the invariable *concomitant* of any exercise of mind, there is not the shadow of a reason for affirming this concomitant to be the cause, rather than the consequent, of the mental activity. The probabilities are all the other way; for there are surely more striking cases of the action of the mind on the body, than of the body on the mind. Our volitions control our movements; our thick-coming fancies, even when no visible or tangible objects are present to sense, impede the respiration and quicken the pulse; our emotions command our blushes and our tears. In such cases, there can be no doubt which is cause, and which is effect; mind unmistakably asserts its supremacy. There are also instances enough on record to prove the possibility of the complete restoration of memory, after it has been, even for a long time, entirely paralyzed.

I may be permitted to add that the essential portions of this account were written out very soon after the experiment described took place, and that extreme caution was used in drawing it up to avoid exaggeration or any form of misstatement.

BUCKLE'S HISTORY OF CIVILIZATION.

FROM THE NORTH AMERICAN REVIEW FOR OCTOBER, 1861.

MR. BUCKLE belongs to a peculiar class of English thinkers, — the Philosophical Radicals, as they have been called — some of whom have become distinguished in every generation for the last two centuries. Their great leader and prototype, who may be regarded as the founder of the school and the most original genius that has adorned it, was the philosopher of Malmesbury, Thomas Hobbes. His successors have adopted most of his opinions, because they inherited from him the peculiar traits of character in which those opinions had their origin. Obstinate, dogmatic, hard-headed, and impassive, they have manifested few qualities of heart or intellect which could win affection or sympathy; and it is perhaps a stronger reproach, that they have never felt the want of either. The nature of their speculations has been determined by peculiarities of temperament and disposition, more than by qualities of intellect. Cold in feeling, and averse to every manifestation of enthusiasm, they have uniformly adopted low and degrading views of human nature, and prided themselves on running counter to the opinions and shocking some of the dearest sentiments of their fellow-men. We lose the best safeguards of sound judgment, when the errors of the head are no longer checked by the warm impulses of the heart. In theorizing upon human conduct, some of the most important data are left out of the account if men are regarded only as thinking machines, as uniformly selfish in their aims, and as guided only by a blind destiny to the accomplishment of results which they had never contemplated. The pride of individual intellect is not at all averse to such humiliating estimates of human nature in general. He who is fond of speculating upon the errors and

weaknesses of his species makes an unconscious exception of his own case, and prides himself on the perspicacity which detects the causes of self-delusion in others. Mackintosh, speaking of Hobbes, remarks, that "it might seem incredible, if it were not established by the experience of all ages, that those who differ most from the opinions of their fellow-men are most confident of the truth of their own. It commonly requires an overweening conceit of the superiority of a man's own judgment, to make him espouse very singular notions; and when he has once embraced them, they are endeared to him by the hostility of those whom he contemns as the prejudiced vulgar."

We do not undervalue the abilities of the leaders of this school, or deny that they have analyzed successfully some of the complex phenomena of mind, and made many important contributions to the philosophy of history and society. Hobbes himself is a striking example of a great intellect warped, but not dwarfed, by a perverse temper. Even Mr. Buckle has much of the genius for system which extends a few principles over a vast field of inquiry, unites the contributions of many sciences, and establishes a deceptive appearance of unity and method where we had looked only for incongruity and confusion. But his learning is multifarious and extensive, rather than exact or profound; he passes with great leaps over the difficult portions of his subject, and discards or mutilates the facts which do not suit his purpose, or will not fit into his theory. Arrogance is fed by imperfect knowledge; and one who is a smatterer in many sciences, without a perfect knowledge of any, often settles magisterially questions which still perplex and confound modest and competent inquirers. Mr. Buckle is not a great scholar, like Mr. Grote, nor has he the varied attainments, and the genius for bold but judicious speculation, which distinguish Mr. Mill. The very title of his work indicates rather overweening confidence in his own powers, than a clear understanding of the nature of his subject, or a definite purpose as to the end to be attained. The self-styled historian of civilization has not yet indicated *what it is that constitutes civilization*, or wherein a history of it differs from any other branch of historical disquisition. With

this imperfect conception of the nature of his undertaking, it is not surprising that he has already filled two thick volumes before reaching the threshold of his proper subject, and has even been driven to a frank confession that his original plan was too extensive, and that its execution consequently is impossible.

In truth, the title of the work, as far as it has proceeded, is a misnomer. It is not a history of civilization or of anything else, but the statement of a system of doctrine, borrowed in great part from the Positive Philosophy of Comte, and supported by a series of illustrations drawn at random from the history of all nations and all ages, and from the records of literature and science. Hence the work is eminently discursive and ill-digested, and might be prosecuted through a dozen more thick volumes, filled with the fruits of the author's desultory reading, but having no more connection with the history of England than with that of China, and affording not even a glimpse of the writer's theory respecting the nature of civilization. In point of mere style, the merits of the book are considerable, and even the rambling and desultory nature of its contents is a source of attractiveness and power. The language is clear, animated, and forcible, sometimes rising very nearly to eloquence, and marked with the earnestness of one who thoroughly believes the doctrine which he expounds. Even the cool dogmatism of Mr. Buckle's assertions, and his entire confidence in the truth of his opinions and the force of his arguments, are often as amusing as they are unreasonable. One who has no doubts to express, and no qualifications or exceptions to state, has a great advantage in point of liveliness of manner. Like his great master, Hobbes, he betrays a good deal of egotism also, a quality which adds much to the freshness and raciness of his style.

We have already intimated that there is no novelty in Mr. Buckle's doctrines, however new may be his manner of stating and defending them. He is simply a necessitarian and a sceptic; and he shows all the earnestness of a fanatic in preaching the gospel of fatalism and unbelief. In his view, man is a plant that grows and thinks, the form and place of his growth, and the products of his thought, being as little

dependent on his will or effort as the bark, leaves, and fruit of a tree are on its own choice. All alike are subject to the "skyey influences." Food, soil, climate,—these make up the man, and determine what he must be. They make up the whole man,—not merely his animal frame, but his life and soul, if he has any. If these are rich and generous, so will be the man, and his thoughts and actions. His moral nature is nothing; it has no lasting effect upon his character or conduct. And his spiritual nature is a mere fiction. The laws of matter and the laws of intellect,—these govern all, and shape our nature and destiny. And these laws are as permanent and uncontrollable as the laws of gravitation and chemical affinity. If we knew them perfectly, we could tell what the past must have been, and what the future will inevitably be; we could "look into the seeds of time, and see which grain would grow, and which would not." And we *can* learn them; from the statistics of what has been, we can prophesy what will be. As with individuals, so with communities and nations. These are but aggregates of individuals, and their history, also, is shaped by irreversible laws; and the system of averages, which eliminates small disturbing forces and abnormal instances, enables us to predict the result with greater ease and certainty in the case of these aggregates than in that of individuals. The history of human beings, the history of civilization, is like that of the solar and starry systems. When a Kepler, a Newton, and a Laplace shall arise to reduce the complexity of the observed and tabulated results to order, we shall see that all is subject to law; and knowing the law, we shall know all.

Evidently this is a sketch of a system of philosophy, and not a project of writing history. At the very beginning, Mr. Buckle has a theory to set forth, and a doctrine to establish; and he ransacks all history, literature, and science for proofs and illustrations of his preconceived opinion. Herein he violates the first principles of his own method; for he is a fanatical adherent of the Baconian system, and attributes most of the errors that have been committed in philosophy and science to the use of the deductive method, whereby reasoners assumed the maxims which they ought to have proved, and

proceeded from generals to particulars, not allowing "either themselves or others to sift the general propositions which were to cover and control the particular facts." Even Adam Smith's great work, the "Wealth of Nations," which appears to most observers a very noble edifice, built up on the inductive system from a vast collection of facts, seems faulty to Mr. Buckle, as consisting too much of maxims previously assumed and evidence subsequently discovered, a great body of derivative principles being worked out in it by pure reasoning. Mr. Hume, also, both as a metaphysician and a historian, is gravely censured for proceeding in the inverse order from laws to facts, and reasoning deductively from preconceived doctrines. To the error thus committed by these two great philosophers, an error in which they were followed by all their Scotch contemporaries, Mr. Buckle attributes the narrow and enslaved condition of the human mind in Scotland, where, for three centuries, it has remained a prey to superstition and religious persecution, the bigotry and blind asceticism of the Kirk stifling all freedom of thought and action, and compelling the people to attribute events to supernatural causes, instead of tracing them to the immutable action of physical laws. Superstition and spiritual tyranny rest upon arbitrary assumptions and the deductive method; while physical science in general, and especially the science of history, find their advancement only in scepticism, the collection of facts, and the application of the principles of the inductive philosophy. Mr. Buckle professes to act upon these principles with the utmost rigor and precision; and he begins with an elaborate statement of the truths which his whole subsequent history is to prove.

The first of these assumptions, upon which the whole philosophy of history is here made to rest, is the doctrine of Fatalism, or the necessity which governs all human actions, so that, when all the circumstances are known, the result can be told beforehand with as much certainty as we now predict the occurrence of an eclipse. We call this doctrine an assumption; for it is made in opposition to the clearest and most abundant evidence. It is a fact attested by the consciousness of every human being, whether learned or unlearned, and at every hour of his existence, that, when two courses of action are presented

to him, he is free to choose between them, and therefore has only himself to approve or blame for the consequences of that choice. In practice, this great truth is always acknowledged and acted upon, however the metaphysician may pretend to question it in his abstract speculation. Hence we all feel self-reproach or self-gratulation, after the consequences of our conduct have become manifest, because we *know* that we might have acted differently. It matters not that we cannot explain *how* man is free ; so neither can we tell *how* gravitation binds the earth to its orbit, or brings back to the ground a stone that has been thrown into the air. The first principle of the Positive Philosophy requires us to accept the facts as we find them, whether they are susceptible of explanation or not. And the fact of human freedom is as undeniable as any phenomenon in the physical world, for it rests upon the clear and dogmatic assertion of consciousness.

Mr. Buckle attempts to impeach the credibility of this testimony, on the ground, first, that many philosophers have denied, and justly too, that there is any independent or special faculty of consciousness, asserting that what bears that name is merely a general state or condition of mind. But the objection only shows that he is incapable of understanding the doctrine that he cites, and that his acquaintance with psychology is extremely superficial. Sir William Hamilton censures Reid for degrading consciousness into a special faculty, rightly maintaining that it is an attribute of all our faculties, — a general condition of the whole intellect. We cannot know, without knowing that we know ; we cannot feel, without knowing that we feel ; we cannot will, without knowing that we will ; and this self-recognition, this knowledge that the mind possesses of its own phenomena, whereby we discriminate our own mental states and appropriate them as our own, is what we call consciousness. We degrade the authority of consciousness, then, when we reduce it to a special faculty ; we exalt it, when we affirm that it is a universal condition of intelligence, an indispensable prerequisite of all knowledge. We cannot even doubt or deny, unless we are conscious that we doubt or deny ; so that the sceptic, when he impeaches the testimony of consciousness, becomes a *felo de se*.

"Waiving this objection," however, proceeds Mr. Buckle, "we may, in the second place, reply, that even if consciousness is a faculty, we have the testimony of all history to prove that it is extremely fallible." And he proceeds to cite the changes of opinion, the various creeds, the different standards of truth, that have characterized different countries and ages, as instances of this fallibility. We are sorry to reply, that this objection betrays even greater ignorance than the former one. Consciousness does not affirm the validity, the truthfulness, of a judgment or opinion, but only the existence of that judgment as a present phenomenon of mind. Hence we are just as conscious of a wrong opinion as of a right one; or, rather, we are conscious only of the belief itself, leaving it for subsequent inquiry and reflection to determine whether it is well or ill founded. We could make no progress in knowledge, we could never uproot old errors, if consciousness had not rightly informed us that we once entertained those errors. Mr. Buckle proceeds to ask, with great simplicity, "Are we not in certain circumstances conscious of the existence of spectres and phantoms," though it is "generally admitted that such beings have no existence at all?" Certainly not, we answer. We are conscious only of seeing indistinctly some white object in an imperfect light, and of believing it at the moment to be a spectre. And consciousness was right, as it always is; we *did* see the object, and we *did* believe it to be a spectre: but examination a moment afterwards proved that *the belief* was wrong, for the supposed spectre was only an old white horse grazing in a churchyard. It is humiliating to be forced to explain so simple a distinction to any one but a school-boy. Mr. Buckle would lay the blame upon consciousness, if he should take a counterfeit coin, believing it to be a good one. Even a school-boy would tell him in that case, that not his consciousness, but his eyes and his judgment, were at fault.

The leading idea of Mr. Buckle's book, "the magnificent idea," as he calls it, is, "that everything which occurs is regulated by law, and that confusion and disorder are impossible." In the application of this idea to the course of human affairs, and especially to the human will, all that he expects

us to concede is, "that, when we perform an action, we perform it *in consequence of* some motive or motives; that those motives are the results of some antecedents;" and consequently, if we knew all the antecedents, and their mode or law of action, we could unerringly predict all that will follow. He subsequently defines free will to be "a cause of action residing in the mind, and exerting itself *independently of* motives."

Here the whole gist of the doctrine and of the argument depends upon the words which we have italicized. Certainly no competent advocate of the freedom of volition will maintain that the determination of the will is "independent of" motives, in the sense of being made entirely without reference to them, just as if no motives existed. If it were so, then indeed human action would be wholly inconsequent and capricious, and man would be cursed with a freedom which he could not exercise except by resigning all the higher attributes of his nature. His freedom would be mere license, — the caprice of an irrational being, to whom no one course of action appears better than another. But it is not so; man is not only a free being, but a rational being; capable of preferences, and having a sense of right and wrong; endued with judgment and foresight. Because he is reasonable, his actions can generally be predicted by one who has a fair knowledge of his character and the special circumstances of the case; because he is free, he not infrequently breaks away from his former courses, renounces old habits, gives the lie to former resolutions, and acts even from a caprice or a whim. His circumstances have not changed, but *he* has changed. His former action had been "in consequence of" some leading motive, yet not in the sense of being enslaved to it, and necessarily yielding to its direction, just as a mass of brute matter inevitably follows a sufficient tractive force. Man does not thus yield, because man is not brute matter; because he is not dead, but living, and has an innate force, which can resist both external circumstances and internal temptation. Motives do not act upon his will, but he acts upon the motives, — considers them, weighs them against each other, suspends all action in reference to them until they are thus fully weighed, and treats them always

as subservient to his determination, never as controlling it, — as his guides, never as his masters. A weight suspended by a rope necessarily hangs always in the same direction, perpendicular to the horizon, unless drawn or pushed aside by some force external to itself. Because we recognize its essential inertness or incapacity of automatic action, we never see it deflected from a perpendicular without seeking some external cause for such deflexion. But a living man, suspended by his hands, can exert spontaneously the force that is in him to throw his body out of the line of gravitation; and we know that the power thus exerted comes from within, — that the man moves himself. This, indeed, is an exertion of muscular power, and a physical antecedent can be found for it, in the nervous action which is needed to bring the muscles into play. But no such physical antecedent exists for the volition which brings out the nervous energy, and which is, in every sense of the word, spontaneous. We may assign a motive as the *reason* of such a volition, but not as its *cause*; for causation implies power, and a reason or motive, being a mere abstraction, a consideration present to the mind, it is absurd to consider it as exerting force. Force is an attribute of substance, not of thought. We attribute force to the will only in so far as the will is identified with the man himself. A motive is a desire, which is a passive state of mind; and it is notorious that desires and volitions often run in opposite directions, so that we desire one thing and will another.

Like most of the modern speculatists who deny the freedom of the will, Mr. Buckle attempts to avoid some of the appalling consequences of Fatalism, by substituting for it what is called the doctrine of Necessity. But this is setting up a distinction without a difference. He asserts that “the actions of men, *being determined solely by their antecedents*, must have a character of uniformity, that is to say, must, under precisely the same circumstances, always issue in precisely the same results.” This is plain Fatalism; the circumstances being what they were, the man *could not* have acted otherwise; then he is not responsible for that action. But among these “antecedents” the Necessitarians admit not only the external circumstances by which the man is surrounded, but his

own previous disposition and character,—the general bent of mind by which he inclines to one course of action rather than another. They immediately add, however, that this prevailing disposition or character is still determined *for* him and not *by* him,—that is, determined by previous circumstances, whose action upon his own mind he could not avoid. Wherein, then, consists his freedom? It matters not whether his action is determined by immediate or remote external events, if the determination in either case is absolute and necessary. If physical antecedents form the character, and then the character determines the volition, it is evidently the same thing as if those antecedents acted directly upon the will.

This distinction of the Necessitarians may be illustrated by that part of the process for the manufacture of shot, whereby the globules which are perfectly spherical are separated from those of irregular shape, by allowing all of them to roll down an inclined plane. The perfectly spherical shot roll in a straight line from the top to the bottom; and these may represent minds according to the Fatalist's theory, their course being determined exclusively by an external force,—that of gravitation. On the Necessitarian hypothesis, minds are like the imperfectly formed shot, whose course is determined not only by gravitation, but by their own lob-sidedness, which causes them, instead of moving straight onward, to waddle off to one side, and there stop. But their imperfect sphericity is determined for them, and not by them, by the previous action of the shot-maker in forming the globules. They govern themselves only in this wise: they have been so badly formed that they wander out of what would otherwise be the track of their destiny. Are they any the more free, or self-determined, for that?

For the support of his theory, Mr. Buckle does not depend much on psychological observation or metaphysical reasoning. He relies chiefly upon such statistical evidence as has been collected by M. Quetelet and other observers, which has disclosed great uniformity in human actions, even in some particulars where it was least expected. Thus, in a given population, provided it be a very large one, the number of murders, of suicides, and of persons accused of various crimes, varies

but little from year to year, and maintains about the same proportion to the whole number of the people. Even the various instruments with which these crimes are committed are employed in nearly the same degree of frequency. It is not pretended that the coincidence is accurate. The annual number of suicides in London, for the five years preceding 1850, varied from 213 to 266, or about twenty-five per cent. As larger aggregates are taken, however, the rate of variation is less. Thus, the average number for these five years is 242; and it is believed, though the returns are not given, that the corresponding average for the five years immediately preceding, or immediately subsequent, would not vary from this number perhaps more than ten per cent. The uniformity of the law, which is obvious enough when the numbers are very large, is obscured as they become less, owing to the presence, as it is argued, of small disturbing forces and minor laws, which render the case more complicated. It is only when these perturbations are eliminated, or reduced to insignificance by the multitude of cases, that the working of the great social law becomes manifest. Mr. Buckle's inference is, that human actions in the long run depend upon great laws affecting the general state of society, and not upon the peculiarities of individuals. Murder and suicide may seem to be infrequent and abnormal acts, contingent on accidental combinations of events and the idiosyncrasies of peculiar temperaments. But even here, statisticians demonstrate, if their observations have been broad enough, that great uniformity prevails, and the constant periodical repetition of the deed points to the steady operation of some uniform cause, which has not yet perhaps been traced or analyzed.

Are not such results, however, precisely what we ought to expect, on the supposition that man is not only free, but intelligent? Reason and foresight, under similar circumstances, lead to general similarity of action. The uniformity, it is true, is not as perfect as if it had been produced by the blind and unimpeded operation of some mechanical cause. But it is precisely this partial uniformity which the returns of the statistician indicate. If all action were mechanical and necessary, there would be no need of uniting a great multitude of

cases in order to reveal the law of that action ; the results would be as uniform as the successive strokes of a steam-engine. The fingers of a hand-loom weaver do not give as regular action to the shuttle as it receives in the power-loom ; and yet the motion is so uniform that, for hours together, the hand of the workman seems to be almost a portion of the machine. Tell that workman, however, that his action is necessary or uncontrollable, that he is not free to make the movement faster or slower, or to intermit it altogether, and he will laugh in your face. Where did M. Comte or his English disciple learn, that all phenomena which are "governed by will are therefore eminently variable and irregular?" They might as well have confounded the law of morals with the law of gravitation ; for though the former is addressed to free and intelligent beings, and the latter describes only the action of brute atoms, the uniformity of the result may be nearly the same in the one case as in the other.

After all, the attempt to discover laws of nature through the rude approximations of statistics, employing numbers enormously large, and manipulating them by the method of averages and the doctrine of probabilities, is a procedure that can hardly be dignified with the name of science. A law of nature does not deserve its name if it be not precise and unerring. But an average is only a compensation of errors, and just the same average is struck whether the errors are large or small. Ten is the arithmetical mean, not only between nine and eleven, but between one and nineteen, and all the corresponding intermediate numbers. If a man fires a great number of shots at a target, the *average* result of his shooting will be precisely the same, whether he is a very poor marksman or a very good one. For as there is no reason why the deviations or errors should be in any one direction from the centre rather than any other, the mean of all these deviations will indicate precisely the same point, whether the circle including them all be six inches or six feet in radius. The figures cited by Mr. Buckle show, that the average proportion of suicides to the whole population of London, taking the mean of several years, is about one to ten thousand. But in order that this fact may answer his purpose, which is to prove that a human being is a

mere machine, moved only by antecedents that are rigorously subject to law, it must be interpreted to signify that there is a suicidal propensity in human nature equal to just one ten-thousandth part of the sum of all the impulses by which that nature is governed. Now, among one hundred thousand Londoners, taken at random, not a single suicide may occur in the course of a year; among another hundred thousand, taken in like manner, there may be, within the same time, one hundred cases. Neither of these facts, considered separately, is reconcilable with Mr. Buckle's law, while their mean result seems to him to substantiate that law. According to such reasoning, *the mean result of two falsehoods is a truth*. And in order to obtain his approximate result, rude as it is, he is obliged to class together events which are really very dissimilar. A suicide caused by failure in business is not the same thing with one produced by religious fanaticism, or another committed when the patient was raving mad. It is idle to suppose that one law of nature governs cases so unlike as those of Chatterton, Clive, Romilly, Castlereagh, Haydon, and Sadleir.

The doctrine of probabilities, an obscure reference to which is the basis of Mr. Buckle's reasoning, is a law which governs the expectations of men respecting a certain event, and not a law controlling the event itself. It is psychological, not physical. That is said to be *probable* or *likely*, which we *expect* to happen; but it is a vulgar error, and one into which Mr. Buckle has fallen, to believe that such *expectation*, however great, creates any physical impulse or tendency which will contribute to *make* it happen. If a hundred thousand balls are placed in an urn, and but one of them is black, it is physically just as possible that I should draw that one black ball at the first trial, as any other, though the probability of doing so is but one out of a hundred thousand. Nay, if each of these balls is numbered separately from one up to a hundred thousand, I *must* draw at the first trial some one number which was just as unlikely to come uppermost as the single black ball.

But we have dwelt too long upon Mr. Buckle's philosophy of history, to the exclusion of the history itself, if the extraordinary *selection* of facts and disquisitions which he has brought

together can be dignified with that name. His method, as we have seen, is to examine the history of what man has been, and what he has done, in order to ascertain the laws both of his being and of his action. He begins by assuming that there are two sets of laws to which man is subject, the laws of matter and the laws of mind. Where man is more powerful than nature, as he generally is in Europe, the latter class of laws prevail, or have the most influence in shaping his conduct and welfare ; but where nature is the stronger, as it has been in all countries out of Europe, physical laws have the strongest influence.

This is one of the rash and hasty generalizations which are perfectly characteristic of our author. He has no caution or reserve as a speculatist ; he never seeks for the exceptions to a principle, or the limitations of it, though a careful study of these generally leads to such a modified statement of the general maxim as alters its whole character and application. But if Mr. Buckle ever takes notice of an exception which is too salient to be winked out of sight, he wastes his strength on an attempt to explain it away. He mutilates the facts, that he may force them into accordance with his theory. The European has generally triumphed, and the Asiatic generally failed, in the contest with nature, not because the former had fewer physical obstacles to contend with, or fewer physical enervating influences to resist ; but because the European was strong, and the Asiatic weak, in those moral and intellectual resources which always give the victory against any odds. Many large regions of Asia, and even of Africa, afford as favorable sites for civilization, so far as physical conditions are concerned, as the most favored districts of Europe, where the arts long since found a permanent home. But we should insult our readers by pausing to enumerate such obvious exceptions to the general principle thus dogmatically enounced. Our own position is, that man is everywhere stronger than nature, except perhaps within the Arctic and Antarctic Circles, or on the Desert of Sahara ; — meaning, of course, not isolated man, but men leagued in society, however rude, and thereby bringing to the struggle the united strength of intellects and muscles banded together and aiding each other. If they ever succumb in the

contest, their defeat is owing to their own vices and degeneracy, and not to physical influences too strong to be resisted. The Esquimaux and the Laplander can live even within the limits of the Arctic Circle; and the Icelanders, on the very borders of it, have kept up civilization for nearly a thousand years.

But let us follow Mr. Buckle to his own ground, — to a consideration of those physical influences which, as he would have us believe, everywhere but in Europe, — that is, over at least fourteen fifteenths of the earth's landed surface, — have either civilized man in spite of himself, or have successfully resisted his own best efforts to emerge from barbarism. The Necessitarian may well triumph if he can make out, for so large a portion of the globe, an overwhelming predominance of physical over mental laws in shaping human destiny. He does not weary us with a long catalogue of the natural agencies by which the welfare of the human race is most affected. He enumerates only four, — Climate, Soil, Food, and what he calls the "General Aspect of Nature," meaning thereby those imposing and awful features of natural scenery, which, by inflaming the imagination, generate superstition, and thus most effectually retard the progress of the human race. We object at once to this enumeration as both redundant and defective; redundant, as embracing both Soil and Food, though the most important office of the former is to produce the latter, so that the two should be counted but as one; and defective, because, to say nothing of other omissions, it leaves out Geographical Position, which is, perhaps, the most important of them all. A more attentive consideration of Assyrian, Egyptian, Greek, Roman, and English civilization might possibly convince Mr. Buckle that a situation along the banks of a great fertilizing and navigable river, or the possession of a long line of deeply indented sea-coast, is a circumstance highly favorable to the rise and continuance of civilization. We are not reconciled, moreover, to the exclusion of another important element, Inherited Qualities of Race, merely by the quotation of a magisterial remark by Mr. Mill, that "of all vulgar modes of escaping from the consideration of the effect of social and moral influences on the human mind, the most vulgar is that

of attributing the diversities of conduct and character to inherited natural differences." We hold that there is one more vulgar still ; and that is, to attribute a preponderant influence to Food and Climate. And though not placing so much stress as many naturalists have done on the peculiarities of the so-called Varieties of Mankind, we still think that there is a good deal in the history and the present condition of the Mongolian, the African, the American, and the Circassian races to sustain the belief, that these races are distinguished from one another by some important original and innate characteristics both of body and mind.

But faulty as Mr. Buckle's enumeration is, to analyze and develop the manner in which the habits and characters of different nations have been affected by peculiarities of their Climate, Food, Soil, and Scenery, would have been an agreeable and instructive disquisition. Montesquieu began such an analysis, but left it very imperfect. No opponent of the doctrine of necessity denies that men adapt their habits to their circumstances, that their customs and tastes are flexible, and that even their characters are gradually modified by a change in their habits and pursuits. All this is an evidence rather of man's power than of his weakness. To adopt Lord Bacon's phrase, Man conquers Nature by obeying her laws. He is born a cosmopolite ; he can live everywhere, except, as we have said, in the regions of perpetual frost ; and habit can endear the most rugged and unpromising country to him, and can make its rigors minister to his comfort.

But this is too simple a view for Mr. Buckle to take. He must represent man, everywhere but in Europe, not as the helpmate and often the master of Nature, but as her slave. And his description of the means and process, as well as of the results, of this subjugation, is most extraordinary. Some of the most controverted theories of English political economy, first suggested by the peculiar condition of the laboring classes in England and Ireland for the last hundred years, doubtful even in relation to them, and unquestionably false in their application to any other country and age, are here brought forward as the keys of universal history, and as alone adequate to explain all the peculiarities of Hindoo and Egyptian charac-

ter and civilization throughout forty centuries. Malthus's doctrine of population and Ricardo's theory of rent have been put to hard service by their authors, but were never before required to solve such problems as these. The bare attempt to make such use of them is an anachronism and a blunder. Who told Mr. Buckle that the population of Egypt under the Pharaohs was in the same state as the population of Ireland under Queen Victoria? or that the cause of the people's misery in either case was that they multiplied too fast, and not rather the pressure of institutions and laws which avowedly favored the unequal distribution of wealth? Ireland has never been so thickly peopled as Belgium, it has at least an equally fertile soil, and both these countries annually export large quantities of food. How idle is it, then, to attribute the sufferings of the Irish, or of the ancient Egyptians, to their numbers having outrun their subsistence, instead of tracing the evil to the form of polity by which they were oppressed! The institution of Castes on the largest scale, an institution which has its origin and its support in political and religious considerations, has always been the characteristic feature of Hindoo and Egyptian civilization; and where the system of Caste is rigidly enforced, there is no freedom of competition in the dealings between man and man, and consequently no division of value into its three component elements. Even where African slavery continues to exist as a single Caste, the distinction between wages and profits disappears, the increase or diminution of the laboring class depends solely on the will of the master, which is regulated by calculations of profit, and the theories of Malthus and Ricardo, consequently, are as little applicable as they would be in a community like that of the Shakers, where all property is held in common and no intercourse is permitted between the sexes.

Mr. Buckle's eagerness to represent the character and conduct of men as determined by merely physical antecedents, and hence to solve the problems of history through the discoveries of modern physical science, has led him to make as rash use of chemistry and physiology in his work, as of political economy. Perhaps a childish vanity of displaying the extent of his acquaintance with the various sciences has often

unconsciously determined the character of his speculations. Thus, he sometimes laboriously constructs a complicated scientific explanation of a fact or phenomenon so simple in itself that it is only darkened by any attempt to render it more intelligible. "The inhabitants of the polar regions," he tells us, "consume large quantities of whale oil and blubber; while within the tropics, the ordinary food consists almost entirely of fruit, rice, and other vegetables." The reason is obvious. Where no vegetables whatever are produced, as in the ice-bound regions of the North, the inhabitants live upon the only food that is within their reach; while the Hindoos find a vegetable diet the cheapest. But this is too simple a view of the matter to answer Mr. Buckle's purpose. He must lug in by the ears a long disquisition on some very questionable chemical speculations of Liebig, whereby the heat of the human body is traced to the use of highly carbonized food; and we are gravely informed that the oils contain six times as much carbon as the fruits. Animal food is more difficult to be had, and more of it is needed, in cold countries than in hot ones; therefore wages tend to be lower in tropical regions than in Northern Europe. Hence the lamentable paradox of the English school, that cheap and abundant food is an evil, after being falsely applied to account for the miseries of Ireland, is here brought forward to explain the origin and character of Asiatic civilization. The whole theory is confuted by experience in America, where food is cheaper and wages are higher than in Great Britain. Moreover, all classes in our Southern Slave States, countries of the orange and the sugar-cane, habitually use more animal food than the laboring Scotch, who live about thirty degrees nearer the North Pole. Mr. Buckle reasons thus: A fat soil and a hot climate make cheap food; cheap food depresses wages; low wages cause an unequal distribution of wealth; and inequality of wealth produces an inequality of political power and social influence. But these inequalities exist in Russia in as great, if not a greater, degree than in Southern Asia; and Russia unfortunately is a very cold country, where the need of animal food is very pressing. In truth, experience and common sense should teach Mr. Buckle to invert his order of cause and effect, and reason the

other way. In dynastic changes and military usurpations, he should find the origin of despotic power ; to despotic and aristocratic institutions, he should trace the inequality of wealth ; and the great body of poverty thus created keeps wages depressed, and reduces the laborer to the poorest possible diet, even where nature's bounty makes rich food abundant and cheap. But as such reasoning would prove man to be more powerful than nature, or the human will to be independent of physical antecedents, it does not suit our author's purpose.

We must not dwell longer on the details of this gloomy and scandalous theory, and can only point out in general terms the grand fallacy of the argument by which it is supported. Take any scheme of social philosophy, any theory of human life and character, however extravagant, and allow its author to range over the history of all countries and ages for facts and illustrations which may seem to harmonize with it, while he is not expected to notice any that contradict it, nor to enter into any detailed or consecutive narrative, and it will be strange indeed if it is not made to appear ingenious and plausible, and if careless readers do not accept it as sound and able speculation. In this Introduction to his great work, an Introduction which already fills two bulky volumes, Mr. Buckle revels in the large results of his desultory studies and omnivorous reading. He has brought together a vast magazine of the scraps of learning, and weaves them into any fabric that may suit his fancy, rather than his judgment. He is not pinned down to any method, he is not confined to any principle of selection. He has put under contribution all science, all philosophy, and all history, at liberty to cull what he chose, and careful not to see anything which would obstruct his progress, suggest difficulties, or mar in any way the harmony of his fabric. In the same chapter, and even the same paragraph, he glances from India to Peru, from the polar regions to Arabia, from the history of the tenth century before Christ to that of the debates on the Reform Bill and the Paper Duty. The wealth and civilization of ancient Peru are attributed to the lavish bounty of nature, the fact being conveniently forgotten, that over a large portion of that country rain never falls ; while California, better watered than Peru, is described

as a parched and sterile region, in order that the lack of moisture and the consequent dearth of food may explain the uncivilized state of its aboriginal inhabitants. Brazil, again, where all the resources of natural wealth exist in measureless profusion, never became civilized, as this author tells us, precisely on account of the abundance of her riches. Nature is too potent for man; her rivers and forests are too grand; vegetation is too luxuriant; animal life is too varied and abundant; "enormous meadows, reeking with heat and moisture," afford nourishment to too many herds of wild cattle. Why, according to Mr. Buckle's theory, Brazil, before it was visited by Europeans, ought to have been the most civilized country in the world. If the blessings of nature in respect of climate, soil, and food civilized India, Egypt, and Peru, a still greater measure of those blessings ought to have done as much, or more, for ancient Brazil. Mr. Buckle forgets, also, that the central and southern portions of the United States, including nearly the whole of the magnificent valley of the Mississippi, present just that assemblage of physical conditions to which, as he maintains, the superior civilization of Europe herself owes its origin. If the qualities of race count for nothing, but merely physical agencies do all, and if, consequently, all refinement and progress must be of home origin, created and nourished by the natural influences of the region within which they exist, then Hendrik Hudson, John Smith, and William Penn ought to have found here a more advanced civilization than that which they brought with them. Besides, as the great physical features of a country remain unchanged through all time, all that depends upon them ought to be equally permanent and irreversible. The climate, soil, and scenery of Egypt and India are the same now that they were under Sesostrius or Porus; but the present semi-barbarous condition of their native inhabitants exhibits no trace of the arts, culture, and refinement which distinguished their ancestors thousands of years ago. Even the languages have perished which contain the records of their ancient civilization, except so far as they have been recovered by the ingenuity and learning of European scholars. And what was the condition of Britain, Gaul, and Germany, down to at least as

late a period as the fall of the Roman empire in the West? They were surrounded by the same physical agencies then as now; but the light of civilization had hardly yet dawned upon them.

A discovery of the laws of European history being resolved by Mr. Buckle primarily into a study of the laws of the human mind, and his method of psychological study consisting merely in the observation of phenomena, and in the application to them of the principles of all inductive science, we have the first grand result of his investigations in the statement, that moral truths are stationary, while intellectual truths alone are progressive. Hence, he concludes, we are to look for the advancement of the race to the development of the intellect, and not at all to the cultivation of the moral feelings. The progress of society must be measured "by the amount and success of their intellectual activity." No discoveries are possible in ethics; the great body of moral truths remains unchanged from one age to another, and all nations instinctively recognize them. Whatever changes take place in the opinions of men, or whatever improvements are effected in their condition, cannot be attributed, therefore, to moral influences, but must be due to the discoveries of the intellect. To adopt our author's own strong and unqualified language, "the growth of European civilization is *solely* due to the progress of knowledge, and the progress of knowledge depends on the number of truths which the human intellect discovers, and on the extent to which they are diffused."

There is a confusion of thought here, and when this is dissipated, Mr. Buckle's proposition is resolved either into a barren truism or a transparent falsehood. Even if discoveries were possible in the province of morals, it would be the business of the intellect to make them. A man cannot see except by the use of his eyes, nor investigate truth except by an intellectual process. The function of conscience, or the moral nature of man, is entirely different; it is not to separate truth from error, but to regulate conduct. Its office is monition, not discovery; it is not so much a guide as a master, for it speaks, not to instruct, but to command. It is a mere truism, then, to say that its laws are the same yesterday, to-day, and

forever, and that they admit neither of enlargement nor repeal.

But this is not Mr. Buckle's meaning. He intends to say, that the increased happiness of a community and its progress in civilization depend altogether upon the cultivation of the intellect, and not at all upon the observance of morality;—which is a palpable untruth, contradicted by all history. “The two oldest, greatest, most inveterate, and most widely spread evils which have ever been known,” he tells us, are religious persecution and war; these have been constantly diminishing; and “their diminution has been effected, *not at all by moral feelings, nor by moral teachings, but solely by the activity of the human intellect, and by the inventions and discoveries* which, in a long course of successive ages, man has been able to make.” And as in respect to these two great evils, so also in inferior matters, the same process has been followed, and the same law holds. “The actions of bad men produce only temporary evil, the actions of good men only temporary good; and eventually the good and the evil *altogether subside.*” They offset and neutralize each other, leaving the progress of the human race to be effected solely by the discoveries of genius, “which are immortal and never leave us.” He pledges himself to prove, in the course of his work, that “the progress Europe has made from barbarism to civilization is *entirely* due to its intellectual activity;” and that the occasional disturbances produced by moral agencies “are but aberrations, which, if we compare long periods of time, balance each other, and thus, in the total amount, *entirely disappear.*”

And as morality has effected nothing for the human race, so religion has done worse; it has been a positive curse, the greatest bane of mankind. Religious persecution, as has been stated, has produced more affliction, has done more harm, has been a greater obstruction to progress, than any other evil—than all other evils united. This is the thesis which nearly the whole of Mr. Buckle's second volume, and a large portion of his first, are designed to prove. The rise of scepticism, in his opinion, is the first condition for the beginning of progress, for any improvement in science, art, civilization, or the gen-

eral condition of mankind ; and religious intolerance is the great evil with which mankind have had to contend. An abstract of the history of Spain and Scotland, or rather a copious gleaning of facts from that history, partial and one-sided in the extreme, fills the second volume, the sole object being to prove that superstition is the greatest of all errors, and religious persecution the most fearful scourge, that mankind have ever known. And the evil of this intolerance, we are specially taught, is only enhanced by the purity of intention and sincerity of belief of those who manifest it. In a moral point of view, the motives of religious persecutors are unimpeachable. "Diminish the sincerity, and you will diminish the persecution ; in other words, by weakening the virtue you may check the evil." Thus a double point is made against both morality and religion ; they are two poisons which enhance and stimulate each other. Fortunately, the intellectual progress of the race is fast conquering both evils, or leaving them behind in the great march of civilization. Discoveries and inventions, chemistry and physiology, political economy and improved means of locomotion, gunpowder, the steam-engine, and the magnetic telegraph, — these are at once the agents and the results of human progress ; these wage unceasing war against credulity and intolerance, and ultimately triumph over them. The discoveries of great men contain those eternal truths which "outlive the struggles of rival creeds, and witness the decay of successive religions. All these have their different measures and their different standards ; one set of opinions for one age, another set for another. They pass away like a dream ; they are as the fabric of a vision, which leaves not a rack behind."

And these are the results of Mr. Buckle's study of the history of civilization ! These are the conclusions to which he has been led by studying the laws of the human mind, not according to the usual method of the psychologist, the moralist, and the theist, through the testimony of consciousness, — "not simply as they appear in the mind of the individual observer, but as they appear in the actions of mankind at large ;" — that is, as they appear in the evidence of statistics, and other recorded facts of history and science ! This improved method

is not original with him ; it is the method of Comte, Mill, and other Positivists and radical philosophers. It is the necessary procedure of those who overlook or condemn the testimony of consciousness, deny the freedom of the will, and extend the dominion of physical laws to the entire exclusion of the supernatural or providential element in human affairs. We would do no injustice to the present advocate of these doctrines. As nearly as our limits would permit, we have stated his conclusions in his own language ; and we would refer any who may doubt the correctness of the outline to his own fuller statement of them in the fourth chapter of his first volume.

Not without reason, then, have we described him as a pupil and imitator of Hobbes, though the philosopher of Malmesbury was the unblushing advocate of despotism in politics, as well as of materialism in philosophy, and selfishness in morals, while Mr. Buckle fiercely asserts the rights of individuals against any interference or any claim of authority by church or state. But he manifests the same arrogant contempt as his great predecessor for the best sympathies and feelings of mankind. Extremes meet ; the absolutist and the radical start from the same premises, move by a common impulse, and arrive at what are essentially the same conclusions. Both show the same inclination for paradox, the same disposition to fly in the face of the dearest convictions of their fellow-men, and both adopt the same brutal tone of expression towards those whose feelings they outrage. We have no scruples about drawing this parallel, as Mr. Buckle will doubtless deem himself honored by the comparison. But we would remind him that notoriety is not fame, that recklessness is no proof of courage, and that he who abjures caution and sobriety of manner, and even a decent regard for the feelings of his opponents, casts away the best safeguards of successful investigation, and does his utmost to discredit his own conclusions.

One argument which he adduces in favor of the doctrine that the moral feelings of mankind do not, in the long run, aid their progress or improve their condition, is too characteristic of the writer and of his method to escape notice. It is founded on the assertion of the statisticians already alluded to, that the annual amount of crime in a country is reproduced, year

after year, with considerable uniformity. Then the moral feelings of an individual, he argues, may exert great influence on the amount of his own transgressions, but will not at all diminish the aggregate of crime in the community to which he belongs. His motives for well-doing, then, must be selfish; he may lessen his own culpability, but he will not benefit society, which must still contend against as much misconduct as ever. Even though we may be conscious, therefore, that moral principles regulate our own conduct, "we have incontrovertible proof that they produce not the least effect on mankind in the aggregate, or even on men in very large masses."

The fallacy here is so transparent, that we marvel both at its escaping detection in itself, and at its failing to disclose the erroneousness, and even the absurdity, of the method of reasoning which led to it. Society is nothing but an aggregate of individuals, and the whole amount of crime registered in a year is but the sum total of the separate offences committed within that period. He who overcomes temptation but in a single instance lessens that sum by unity; and this is a positive gain to the community, and a gain which is greater or less in proportion to the heinousness of the offence in question, and not in proportion to the number of other crimes with which it is compared. Mr. Buckle's mode of reducing the magnitude of this gain to insignificance, through "the precaution of studying social phenomena for a period sufficiently long and on a scale sufficiently great," — that is, by counting it only as one case out of a thousand, or one out of a million, — is precisely akin to the folly of a child, who should attempt to lessen his estimate of the size of an obstacle by regarding it from so great a distance that the mountain would seem to the eye no larger than a mole-hill. It is *his estimate* of the magnitude, and not the magnitude itself, which he lessens by this ingenious folly, this attempt at self-deception. The statistical method, as we have already hinted, is a means, not of avoiding, but of hiding errors, by setting them off one against another. It is a compensation of opposite blunders.

But the great fallacy which underlies the whole of Mr. Buckle's doctrine and argument arises from the vagueness

and uncertainty in his use of the word *civilization*. It is with good reason that he has omitted, as we have already mentioned, to define what that is of which he has attempted to write the history. Had he even attempted such a definition, he must have recognized the absurdity of his theory. And what an omission! It is as if the author of a new system of logic, or a new scheme of philosophy, should execute half of his work before settling in his own mind, or informing his readers, what logic or philosophy is. His edifice is far advanced towards completion, but he has forgotten to lay its foundation. The only word which he uses as synonymous with Civilization is "Progress," a term which is still more loose and uncertain in its signification. He means, though he does not directly say so, the "Progress of Knowledge;" and if any one should attempt, by a large induction from many passages of his work, to ascertain what Civilization, according to Mr. Buckle, means, the answer would undoubtedly be the Progress and Diffusion of Knowledge. This is the assumption on which his whole theory is built; and his parallel assumption is, that the advancement of knowledge constitutes, and is the measure of, human power and happiness.

Thus understood, his paradoxical assertion, that the cultivation of the intellect, and not of the conscience, is the source and root of civilization, becomes a mere truism, even an identical proposition. Certainly, intellect is the only means of the advancement of knowledge, and conscience has nothing to do with it, except indirectly. A more harmless platitude was never uttered. But in this sense, it is not true that civilization is the same thing as happiness, or the only means of securing happiness. For happiness depends on the due regulation of the passions and the conduct; and this is the province of morality and religion, the cultivation of the intellect having, at the best, but a remote and indirect agency in the work. The sorrowful confession of many a philosopher and man of science, the history of many a genius, — nay, the experience of half mankind, — attests that the increase of knowledge is not necessarily the increase of happiness.

We now know how to construe our author's oft repeated assertions, that "civilization is regulated by the accumula-

tion and diffusion of knowledge," and that "the growth of European civilization is solely due to the progress of knowledge." He is really identifying the two elements, which he here places in the nominal relation of cause and effect; he means that civilization is the progress of knowledge. This is merely an unauthorized use of language, which constantly leads the reader astray, and hides the author's vagueness of meaning and unsoundness of argument. We can rightly appreciate the doctrine and the reasoning only by defining at the outset what people generally mean by Civilization.

We say, then, that the Civilization of a community means *its happiness, so far as this is secured by the prevalence of morality, intelligence, and refinement of taste, and by the general enjoyment of the products of the fine and the useful arts.* For the correctness of this definition, we can only appeal to the dictionary and the general usage of the best writers.

Taking this signification of the word along with us, Mr. Buckle's doctrine ceases to be even plausible; it is simply absurd. The highest degree of civilization ever attained by the ancients — and it was a degree which, in many respects, the moderns have never equalled — was that of Athens under Pericles. But what did the *knowledge* even of the wisest Athenians amount to? And of what discoveries or inventions could they boast? It is little to say, that a pupil in one of our high schools knows vastly more than the best of them did. In their times, not one of the physical sciences had begun to unroll the secrets of nature. They knew a little geometry, a very little astronomy and natural history; as to their acquisitions or speculations in logic, rhetoric, ethics, and metaphysics, Mr. Buckle will hardly dignify these with the name of science. But why need we state the case in our own language, when we can borrow the weighty words of one who was the greatest scholar, and one of the greatest thinkers, of the present century?

"Every *learner* in science," says Sir William Hamilton, "is now familiar with more truths than Aristotle or Plato ever dreamt of knowing; yet, compared with the Stagirite or the Athenian, how few, even of the *masters* of modern science, rank higher than intellectual barbarians! Ancient Greece and modern Europe prove, indeed, that

‘the march of intellect’ is no inseparable concomitant of ‘the march of science ;’ that the cultivation of the individual is not to be rashly confounded with the progress of the species.”

The brightest period in the history of Roman civilization, the age of Augustus, ranks much below the age of Pericles, simply because morality and philosophy had declined, both in the schools and in their influence on society. In ethics and philosophy, Cicero was but a feeble copyist and translator of his Greek teachers, and his is the only name that deserves mention. The fire of patriotism had burnt out, and the standard of morality, both in public and private life, had fallen so low as to threaten society itself, not so much with dissolution, as with putrescence. Under the second and third Emperors, at least, if not under the first, the only motto for those who could boast either of patrician blood or of mental culture seemed to be, “Let us eat and drink, for to-morrow we die.” Among the upper and middle classes, even the love of offspring had been overpowered by the love of vice. Population rapidly declined. Patricians disowned or gave away their children, if they had any, willed their property to strangers, and, after leading a life of extreme licentiousness and effeminacy, showed some remains of the old Roman spirit only in the cheerfulness and alacrity with which they opened their veins, or took poison, after they had been denounced to the Emperor. Satire was the only branch of poetry which the Romans may be said to have created, and in which they really excelled ; for satire alone had a legitimate theme, and abundant materials for its work. In Horace and Juvenal, the laughing and the indignant satirist, we find such pictures as literature nowhere else affords of a civilization which had become thoroughly corrupt and debased,—which had really ceased to be civilization, as it had rotted in its own vices. There was some reaction under Trajan and the Antonines, caused partly by the vigorous rule and stoical morality of these Emperors, and partly by the influence of Christianity, which had begun to pervade the middle and lower classes, and was working from them upward. But the reaction was short-lived, as no extraneous causes could check a decline that had already become so marked and proceeded so far. Christianity

found its proper work in taming the ferocity and modelling the characters of the rude barbarians from the North, who trampled out the last vestiges of Roman power and civilization.

Yet, from Pericles to Nero, it cannot be denied that mere *knowledge* had increased. Archimedes and Hipparchus had made important additions to physical science. The Julian reformation of the calendar was a considerable step in advance. There were writers of some note in natural history, agriculture, and architecture. According to Mr. Buckle's mode of judging, it cannot be denied that the world had made *progress*, — that Pliny and Seneca *knew* more than Plato or Aristotle. We have learned from Herculaneum and Pompeii, that the Romans had made great advances in the *useful* arts, for their houses were furnished with many conveniences and luxuries which the Athenians in their palmiest days had never dreamed of. But humanity had little reason to boast itself of this "march of science;" for not even Mr. Buckle will dare to deny, in this instance at least, that the advancement of knowledge was accompanied by a woful decline of every element that constitutes true civilization.

Coming down to modern times, we find still more abundant means of refuting the paradoxical and debasing doctrine of this book. So far from its being true "that the growth of European civilization is solely due to the progress of knowledge, and that the progress of knowledge depends on the number of truths which the human intellect discovers, and on the extent to which they are diffused," while morality and religion are either of no account or positively injurious, — so far, we say, is this humiliating assertion from the truth, that all history proves precisely the reverse. The great agents and tokens of modern civilization are those institutions of beneficence, those reforms of old abuses, vices, and crimes, and that amelioration of legal codes and private manners, which have added most to the happiness of the human race, and which are directly and undeniably traceable to the influence of morality and religion; while the mere discovery of new truths, the enlarged boundaries of science, and the triumphs of intellect, have had little or no share in producing them. This is our

thesis, and it has at least this advantage over Mr. Buckle's, that it is one which we are not ashamed to avow and defend; while he is driven to the humiliating acknowledgment, that his "conclusions are no doubt very unpalatable;" that they are even "peculiarly offensive;" and the only apology he can offer is the cold-blooded one, that "the unpleasantness of a statement is hardly to be considered a proof of its falsity."

We say, then, that hospitals, public schools, and almshouses,—the support of the poor and the instruction of the ignorant,—the amelioration of prisons, the abolition of the slave-trade, the humane treatment of prisoners of war, and the growing disuse of brutal sports, are the chief features of difference between barbarous and civilized nations at the present day; and that for all of them we are indebted to the increased cultivation of the moral feelings, to the greater activity of conscience, and — we will not be deterred by Mr. Buckle's sneers from adding — to pulpits, priests, and sermons. If he denies this assertion, let him point out any nation upon earth before the Christian era, or any barbarous or unconverted nation of the present day, in which such institutions have been erected, such efforts made, and such improvements effected, by the spontaneous concurrence of government and people. If any instances can be mentioned, and they must be few and weak, they are found probably among the Mohammedans, the better part of whose morality and humanity, it will be generally acknowledged, is an aftergrowth and a plagiarism from the Jewish or Christian Scriptures. Modern civilization is distinguished from ancient chiefly by an increased tenderness for human life, and an increased anxiety to relieve human suffering. It is not that men did not *before* know how to spare or to pity. It is not that the progress of discovery and invention has now first enabled us, or taught us how, to be merciful and charitable. In earlier times, power and intellect were not wanting; but will, *the attempt*, was never made. We would not be unjust to Science; she has done much as the handmaid of morality and religion. She has rendered asylums for the poor, the sick, the maimed, the blind, the deaf and dumb, more efficient; but she never originated them. She has been often the hired, often the volunteer,

servant of charity. But in all her proper and peculiar work, no one will deny that the pride of intellect and the desire of reputation have been added to the love of knowledge as her motives.

We claim all these triumphs of modern civilization for morality, first stimulated and rendered active and efficient — Mr. Buckle will not allow us to say first *discovered* — by the Christian religion. We claim them for the only gospel that was specially, and by its Founder, “preached to the poor;” whose first precept is, “Love your enemies;” whose first benedictions fell on those “that mourn,” on “the merciful,” and “the pure in heart;” and whose first caution is, that “when thou doest alms, let not thy left hand know what thy right hand doeth.” Mr. Buckle says, that these and similar dogmas “have been known for thousands of years;” and “that the systems of morals propounded in the New Testament contained no maxim which had not been previously enunciated; and that some of the most beautiful passages in the Apostolic writings are quotations from Pagan authors, is well known to to every scholar.” As the single brief citation, a part of one line, which St. Paul made from Aratus in his speech at Mars Hill, is a very insufficient foundation for this last broad assertion, we are compelled to believe that our author has made some discoveries in the Apostolic writings which are not “known to every scholar,” or indeed to any one except himself. And against the former statement we place the authority of one of the greatest metaphysicians of modern times, and one who was certainly not so much a friend, as an opponent, of the Christian religion. In his “Religion within the Limits of mere Reason,” Kant cites these and other moral precepts, taken chiefly from the Sermon on the Mount, “as proofs of the divine mission” of Him who uttered them, and of “the honor due to Him as founder of *the first* true church.” It is idle to say that isolated hints of one or more of them, taken separately, can be found here and there, after great search, in the writings of some Pagan moralists. He who first announced them collectively, in one brief discourse, not as the fruits of ethical disquisition, but as a message from God to man, is their true author, their original promulgator and voucher.

Let him who doubts or denies this assertion point to the first heathen nation that *has* reduced them to practice in such institutions and endeavors as we have mentioned, or to the first Christian nation that has *not* done this.

We deny that the mere advancement of science, the discovery of new facts and truths, whether physical or purely speculative, however gratifying to the pride of intellect and honorable to the genius of the discoverer, has had any but an indirect and comparatively feeble influence on the progress of civilization. Such discoveries are the effects, not the causes, of that "prevalence of morality, intelligence, and refinement of taste," in which, as we have said, true civilization consists. Now, the only two of these elements which can come into question here, intelligence and refinement, whether of an individual or a nation, are *not* increased or heightened in proportion to the number of truths known or facts discovered. Not to recur to the instance, already given, of the Athenians in their palmyest days, as compared with any nation or age for fifteen centuries after the glory of Athens had departed, we will take what is, so far as discovery is concerned, the brightest epoch of modern times. This is unquestionably the age of Newton and Leibnitz, of Boyle, Hooke, Huyghens, Von Guericke, Cassini, Pascal, Wren, and a crowd of other illustrious names. Designated by its principal sovereigns, it is the age of Charles II., Louis XIV., and Leopold I. But no Englishman or German will refer with pride to the history of his country during this period, or will maintain that the general civilization of his people was then either at its height, or making more rapid progress than it had done for several generations before. Generally, it was an age of licentious manners and feeble public spirit, when little was done for popular education, or to elevate the condition of the laboring classes, — when courts were corrupt and the people enslaved. France, it is true, was then in her Augustan age; but her glory consisted in her literature, not in her science. Mr. Buckle even maintains, that her literary splendor in those times was "the work of the great generation" that had just passed away; that "the absence in France, during this period, not only of great discoveries, but also of mere practical ingenuity, is certainly

very striking;" and, generally, that "the age of Louis XIV. was an age of decay: it was an age of misery, intolerance, and oppression; it was an age of bondage, of ignominy, of intolerance." All this is coarsely exaggerated, and marked by our author's usual recklessness of statement and brutality of expression. The French of that day certainly showed great refinement of taste and elegance of culture; and, amidst much tinsel splendor, they achieved more than any other generation of their countrymen in literature and art. But their triumphs were not those of the intellect, in the narrower sense in which Mr. Buckle uses that term; the physical science of Paris at that time was an exotic, not a native growth. The only eminent astronomers patronized by Louis XIV. were foreigners; and France was full half a century behind other nations of Europe in accepting the Newtonian theory. The general result is, that the people of the most splendid civilization made the fewest discoveries; while with the Germans, English, and Dutch, the case was precisely the reverse. So, also, the richest and most brilliant civilization of Europe, in the fifteenth and sixteenth centuries, was that of Rome, Florence, and the other cities of Italy; and this, again, manifested itself chiefly in literature and art, and hardly at all in scientific inquiry, or the promulgation of new truths.

In fact, great achievements in science, like those of Galileo, Newton, Laplace, and Cuvier, do not early or easily enter into the mass of familiar truths on which common minds are fed, and by which the broad civilization of a people or an age is affected. They dignify, but they do not constitute, that civilization, nor give rise to it. They remain for a long time, if not forever, like the fruits of the more refined scholarship and the processes of the higher mathematics, the exclusive property of a comparatively small body of the learned. Art and literature, morality and religion, are far more popular and diffusive in their effects; they are cosmopolitan and universal, not confined to any country or age, and not by any means limited in their influence to the particular classes by which they are specially professed. They affect the whole atmosphere in which all the people live and act. They color and shape the national life and character in every vein and lineament. Wealth,

public spirit, and popular education — both that which is dispensed in schools, and that which is constantly imbibed from the whole environment of institutions and circumstances in which a people are placed — are the agencies which foster and diffuse these national blessings. Civilization is not shut up in laboratories, scientific academies, or museums of natural history, and does not issue from them ; on the contrary, the most splendid civilization may exist where these means and appliances of mere physical research are entirely wanting.

But it may be said that invention, though not discovery, is a most important agency in the accumulation of wealth, and in bringing about that general enjoyment of the products of the fine and the useful arts, which we have admitted to be one great constituent of civilization. So it is ; but this admission makes nothing for Mr. Buckle's purpose, unless he can prove that invention is the natural and ordinary result of discovery. He here falls into the common error, of which even scientific minds are not yet generally disabused. We altogether deny that either the great inventions which have turned the course of human affairs, or the minor ones which have added so much to our comforts and luxuries, and widened the enjoyment of them, are to be ranked among the gifts of science, or that they have been made generally by scientific men. As striking instances of the former class, take gunpowder, the mariner's compass, and the printing-press ; " for these three," says Bacon, " have changed the whole face and state of things throughout the world, — the one in literature, another in warfare, and a third in navigation, — whence have followed innumerable changes ; insomuch that no empire, no sect, no star, seems to have exerted greater power and influence in human affairs than these mechanical inventions." But Bacon himself notices the curious fact, that the origin of all three, though recent in his day, is " obscure and inglorious." In fact, two of them were mere lucky accidents, made we know not positively where or by whom, certainly not by any one of scientific pretensions, as the legend which attributes the invention of gunpowder to Friar Bacon, or another monk, Berthold Schwarz, is wholly undeserving of credit. Printing was only a lucky thought which occurred almost simultaneously to two or three rude mechanics.

There was nothing to put a person of scientific habits of mind upon the track of either invention, nothing to incite or guide his inquiry. As De Maistre says, the means of making a great discovery generally have no apparent connection with that discovery ; and the illustration which he gives of this remark is furnished by Lord Bacon himself. If Archimedes and a dozen others, equally eminent in science, had been asked to invent an engine for beating down the ramparts of a city without coming within two or three hundred yards of them, they would have been entirely at fault, or would have thought only of some mode of improving the ancient catapult. But there comes along an obscure monk, who says, " Triturate and mix together sulphur, saltpetre, and charcoal ; " — and the thing is done. So, also, if twenty scientific physicians had been required, a century ago, to invent some means of extirpating the small-pox, they could not have hit upon anything better than to ask the sovereigns of Europe to cause all their subjects to be inoculated by compulsion. Certainly, nothing short of divination could have sent them to the cows for a solution of the problem. Again, was it science that gave us Peruvian bark, ipecacuanha, mercury, or even sulphuric ether as an anæsthetic agent ? Or was it rather such experimentation as that of an Indian doctor or conjuror, an African Obiman, or an English Merry-Andrew ? The only real question is, whether such discoveries are due to what is called a lucky chance, or to that merciful Providence which, in ways unseen by men, often overrules folly and selfishness, by rendering them instruments of good.

If we turn to the minor inventions which have aided the accumulation of wealth and enhanced our material well-being, we still find that we are indebted for most of them either to a fortunate accident, or to the practical skill of some ingenious mechanic, whose school-education, perhaps, barely enabled him to write his name. After the workman has invented the machine or the process, science usually steps in, and, more or less successfully, explains the nature of the improvement, points out the physical laws that are concerned in it, and often uses it as a guide in its own future investigations. Sometimes it is unable to supply even this poor commentary, and the process con-

tinues to be empirical and inexplicable. Thus the mode of vulcanizing India-rubber, one of vast importance in the arts, offers an insoluble problem to the chemist. He cannot tell why heating and rubbing together caoutchouc and sulphur should produce an entirely new substance, — a *tertium quid*, having other and far more valuable properties than either of its ingredients. So in many of the processes for manufacturing iron, the means have no apparent connection with the end; the chemist measures the results, but cannot tell how or why they are produced. The eminent professors of science who lectured upon the results of the Great Exhibition in London in 1851 seemed to manifest “an uneasy consciousness of the extent of the workman’s knowledge, — almost a doubt whether it was not for the workman to teach them, rather than for them to teach the workman.” Dr. Black, one of the greatest of modern chemists, remarks, somewhere in his Lectures, that most of the chemical discoveries which have greatly benefited the arts are due to the manipulations of skilful operatives, rather than to what is called science or chemical philosophy. Many products of the useful arts were obtained by the ancients in as great perfection as by men of our own day; the article has profited nothing by the experience and the science of two thousand years. One of the lecturers just referred to says, “If Simon, the tanner of Joppa, had been able to send leather to the Exhibition, no doubt he would have carried off a medal.”

The inventors of the spinning-jenny were a Birmingham mechanic, a common laborer, and a barber’s apprentice. Nearly all of the improvements in the steam-engine were made by uneducated mechanics, and they were constantly in advance of the science of their day. The most distinguished among them were Savery, a head miner; Newcomen, a blacksmith; Cawley, a glazier; and Humphrey Potter, an idle little boy. Watt’s modifications of the machine have greater scientific pretensions; but he was only a half-taught instrument-maker when he contrived them, and many of them have now gone out of use, as practical men have found the engine which was employed before his day to be not only more simple, but more efficient and economical. Fitch, Fulton, and Hulls divide between them the honors of steam navigation, neither of them having any scientific attainments to boast of.

Mr. Buckle attributes to the progress of knowledge the diminution of "the two greatest evils known to mankind," — religious persecution and the practice of war. Morality and religion, he affirms, have nursed and exasperated the former, and done nothing towards diminishing the latter; while the influence of intellectual discoveries has vanquished both. We join issue with him on all these points. Both the evils in question proceed from the passions rather than the judgment. Men need to be calmed and pacified, not to be instructed or argued with, in order to induce them to remain at peace or to tolerate difference of opinion. It is a sentiment rather than a conviction, — an instinctive recoil of our moral and humane feelings, instead of a perception of new truths, — which has stopped the practice of torture, whether inflicted for political or ecclesiastical purposes. The rack and the thumb-screw have gone out of use, because the increased humanity of these later times shuddered at the very sight of them; and the bitterness of religious disputes has in great measure ceased, because men now think less of the dogmas, and more of the practice, of Christianity. For a century after the Reformation, religious persecution was rife, as the angry feelings consequent on that great schism raged and were embittered by the political changes that grew out of it, and because men were cruel. As the strife cooled, and experience showed the inutility of coercive measures, the voice of humanity and the mild precepts of the Gospel were again heard and respected. Manners were softened, and men ceased to persecute one another under the same impulses and feelings which led them to improve prisons, erect almshouses and hospitals, abolish the slave-trade, and send out missions to the heathen. Mere science, the mere progress of discovery and invention, contributed as little to this result as to the first promulgation of Christianity. It is impossible to see how it should have had any effect on either.

As to the practice of war, Mr. Buckle hazarded his assertion of its rapid decline a little too soon. Writing in 1855, he says: "It is highly characteristic of the actual condition of society, that a peace of unexampled length should have been broken, not as former peaces were broken, by a quarrel be-

tween two civilized nations, but by the encroachments of the uncivilized Russians on the still more uncivilized Turks." This is an ingenious statement of the case, made to conceal the fact, known to all the world, that Turkey was only a nominal partner in the strife, only a pretext for it, and that the real contest was between France and England, two of the most civilized nations on the earth, on the one hand, and Russia on the other, the prize for the victor being the possession of Constantinople. "Russia is a warlike country," we are told, "not because the inhabitants are immoral, but because they are un-intellectual." But the inhabitants of Russia, taken as a mass, have no more voice or influence in determining between war and peace, than they have in guiding the course of the planets. The sovereign, the nobility, and the higher officers of the army, made the war; and these are as civilized, as enlightened, as "intellectual," — to copy our author's pet phrase, — as any court in Europe.

And as to the decline of war, what has been the history of the ten years which followed what our author calls the forty years of peace, 1815–1855, — a peace broken only by a war in Afghanistan, one in Scinde, one in China, one in Mexico, one in Holstein, one in Hungary, two in North Italy, one in Rome, and about half a dozen revolutions, attended with more or less bloodshed, in the most civilized nations of Europe. The last ten years [before 1865] have witnessed the Crimean war, the war of the Indian mutiny, a second war in China, the war of France, Sardinia, and Austria in Lombardy, Garibaldi's war in Sicily, Sardinia's conquest of Naples and the Roman provinces, and the fearful civil war which raged in our own unhappy country. And at the present moment, also, France and England are vying with each other in preparations for war on the largest scale, and a terrible contest is impending in Hungary and Venetia. The decline of war! Search the annals of the world, and we doubt if a period of equal length can be found which has witnessed so terrible an outbreak of the warlike spirit as that which has characterized the last twenty years ending in 1865. Terrible as the contest was which terminated in 1815, it was, in the main, a struggle of all Europe against one man.

Mr. Buckle attributes his fancied decay of the desire for war to the march of intellect generally, but specially to the invention of gunpowder, the discoveries made by political economy, and the improved means of locomotion. Now, gunpowder came into general use about four centuries ago; and during this time it may well be doubted if there have been fewer wars, or less bloodshed, than in the four centuries immediately preceding. Economical science has not *discovered* a single truth which tends to increase the desire for peace; it has merely furnished some additional illustrations of the costliness of war, which would have more effect if nations fought from motives of interest, and not from considerations of honor, jealousy, anger, revenge, and other turbulent passions. No further proof was needed that war is always a costly, often a ruinous, expedient. The quarrels of nations, like those of individuals, grow out of their ill-regulated passions; and these can be checked and restrained, not by considerations addressed to the intellect, but, if at all, by the teachings of morality and religion. These last have greatly humanized war; they have ameliorated the fate of captives, forbidden the use of poison and other savage expedients, protected the property and lives of non-combatants on land, and are on the point of putting an end to privateering, which is only another name for piracy, at sea. And this is all that is possible, until mankind have become, not wiser, but better. Never was a war more obviously and ruinously destructive of all public and private interest than that into which the Southern States of this Union blindly plunged. But to oppose the madness of Secession by considerations drawn from political economy or constitutional law is like preaching to a tornado. The tempest must blow itself out. Only when the wind has lulled can the voice of reason or the whispers of conscience be heard.

But the rambling and desultory character of Mr. Buckle's work has protracted the task of following him, and our remarks are already extended to undue length, before a tithe of his errors and fallacies have been exposed and refuted. We have dwelt mainly upon the principles on which his History is based, as an attempt to trace their application in detail would

far exceed our limits. And yet the absurdity of the conclusions to which he is led furnishes, perhaps, the best proof of the erroneousness of his method and the falsity of his premises. The whole of his second volume is devoted to an elaborate examination of the history of Spain and of Scotland, in the hope of proving that superstition is always rife where volcanoes and earthquakes are common ; — that, in fact, it owes its origin to these and other startling phenomena of nature, and that it can never be exposed and put down by the employment of the deductive method of reasoning. This is rather a meagre result of an inquiry extending so far, and conducted with so much pretension. And, as a doctrine, it is simply ludicrous. Never did a poor pedant, bitten with the love of theorizing, ride so far afield, in order to bring home a paltry and absurd conclusion. We should almost suspect the sanity of one who seriously entertained it. If it were true, the inhabitants of Iceland, a country surpassing every other on the globe in the grandeur and striking character of its physical phenomena, made inaccessible by enormous ice-fields for most of the year, often shaken by terrible earthquakes, mailed in sheets of lava and studded with active volcanoes, ought to be the most superstitious race on earth. Unfortunately for Mr. Buckle's theory, they happen to be a peculiarly sober, industrious, intellectual, well-educated, Christian people, — certainly much less superstitious than the inhabitants of the vast sun-scorched plains of Hindostan, where nature offers only a wearisome monotony to the beholder. Again, Scotland is troubled neither by earthquakes nor volcanoes. True, it has mists, and mountains, and severe winters, in which Mr. Buckle's theory, *faute de mieux*, takes refuge ; but its near neighbor, Norway, has precisely the same characteristics, and the Norwegians are not peculiarly superstitious.

Then the elaborate attempt to prove that science in Scotland has made an excessive use of the deductive method is an utter failure. Adam Smith did not make half as much use of this kind of reasoning as Malthus and Ricardo did ; indeed, it is chiefly owing to the latter, an English Jew, that English political economy has become a deductive science. As a speculatist, Hume makes more use of facts and less of abstract reasoning

than Hobbes ; the latter is a system-maker, and the former a destroyer of systems. Leslie, as a writer on heat, relies much more on experimentation and induction than Fourier. In chemistry, as compared with Dalton, Lavoisier, or Davy, Dr. Black must be regarded as eminently an inductive philosopher.

But enough of details, in which the task of exposing Mr. Buckle's blunders would be endless. We have spoken with freedom and severity of his work, because its tone and tendency are bad. With considerable merits of literary execution, it is characterized in a remarkable degree by arrogant pretensions, a dogmatic spirit, coarseness of expression, and a contemptuous disregard of the feelings and opinions which a vast majority of the author's countrymen hold sacred. Under the guise of a history, its only aim is to teach the preconceived conclusions of a false and debasing philosophy. If these conclusions were sound, man would be an animated machine, not accountable for his actions, and without either hopes or fears extending beyond this brief sphere of earthly existence. Rashness of assertion and inconsequence of reasoning are what we expected to find in the statement and defence of such doctrines ; and in this expectation we have not been disappointed.

JOHN S. MILL'S EXAMINATION OF SIR WILLIAM HAMILTON'S PHILOSOPHY.

FROM THE AMERICAN PRESBYTERIAN REVIEW FOR APRIL AND JULY, 1869.

INDIRECTLY, Mr Mill's "Examination of Sir W. Hamilton's Philosophy" has been of great service to metaphysical science. It has stimulated inquiry and discussion, and given a fresh interest to the investigation of old problems. Through the cloud of replies, examinations, and criticisms which it has evoked, it has even contributed largely to the establishment of sound doctrine. After all, Mr. Mill's book was not more an attempted refutation of Sir W. Hamilton's philosophy, than an exposition and defence of his own system of metaphysics. He thus gained a slight advantage in the outset; since the philosophy which he attacked was made responsible, by implication at least, for any errors or defects discoverable in his adversary's statement of it; while his own system was apparently strengthened by every such exposure of the seeming weakness of its rival. But an advantage of this sort is soon lost; Sir W. Hamilton's part in the controversy is fast slipping out of notice, and Mr. Mill's own system has become the target against which most of the shots are now directed. In the first edition of his book, he appeared as an assailant; in the third, he stands on the defensive against a host of opponents.

As a critic, Mr. Mill is disposed to be just and candid. We cannot call him generous; for he ought, before frequently charging his opponent with inconsistency and self-contradiction, to have kept more constantly in view the fact, which indeed is stated in the first chapter of his book, that Hamilton's system was given to the world only in fragments, at long intervals, during the last twenty-seven years of a busy life; and that his "Lectures," the only approach to a consecutive exposition of it, were a posthumous publication of what was

probably never intended by him for any other use than as manuscript notes, though they were printed after his death nearly as they were first written by him some twenty years before. Extracts from these Lectures, written in 1836, ought not to have been compared, so frequently to his disadvantage, with statements of his more matured opinions made in his edition of Reid in 1846, or in his "Discussions," which passed to a second edition in 1853. Hamilton was eminently a progressive student and a candid and independent thinker, who never dreaded the imputation of a change of opinion, or shrank from modifying a statement which appeared to his calmer thought ill-judged or excessive. His philosophy can be fairly estimated only from his own latest published exposition of it, the second edition of his "Discussions;" or, if these are compared with his edition of Reid, it should be, not for the purpose of charging him with inconsistent opinions or incoherent thought, but to show the gradual development of his doctrines in his own mind. For his Lectures, we are persuaded that, during the last ten years of his life, he would have declined to consider himself as at all responsible, since they were hurriedly written at the outset, each Lecture, as the Editors tell us, being "usually written on the day, or, more properly, on the evening and night, preceding its delivery;" "they never were revised by him with any view to publication;" and the manuscripts probably were not destroyed only because "he intended to make some use of portions of them, which had not been incorporated in his other writings, in the promised 'Supplementary Dissertations to Reid's Works.'" Mr. Mill himself observes, "one of the unfairest, though commonest, tricks of controversy is that of directing the attack exclusively against the first crude form of a doctrine." We do not believe Mr. Mill ever consciously violated this sound principle; but if he had always remembered it, he would have withdrawn, or essentially modified, several passages in the third and eighth chapters of his book. No fair opponent will now hold him responsible for those statements in his first edition, which he has silently altered, or avowedly abandoned, in the third.

It is curious that neither Mr. Mill nor any of his critics

seems to have been aware that "the Philosophy of the Conditioned" was Hamilton's only by adoption, since it is at least two centuries old. There cannot be a more distinct and forcible exposition of this Philosophy than is presented in the eloquent fragments which constitute the "*Pensées*" of Pascal. Mr. Mill only skirmishes on the outskirts of the subject, when he makes an elaborate attempt to prove that Hamilton's discussion of it confounds three distinct meanings of the word *conception*; we can hardly believe that he is serious in thus raising a dust which only obscures the question. And a similar doubt, whether he is in earnest, will intrude, when we find him gravely affirming that "we cannot conceive two and two as five, because an *inseparable association* compels us to conceive it as four;" and that we cannot conceive two straight lines as inclosing a space, because "the mental image of two straight lines which have once met, is *inseparably associated* with the representation of them as diverging." It is rather hard to believe that a mathematician has no better reason for affirming either of these truths, than a French rustic has for persistently calling a cabbage a *chou*, or an English peasant for invariably denominating it a *cabbage*. The etymology of the word *con-capio* indicates clearly enough, that to *conceive* means to grasp together attributes in a unity of presentation before the mind, — that is, to individualize them by an act of imagination. Of course, the attempt to do this must fail, either when there are no attributes, except negative ones, to be grasped together, as is the case with the Infinite, or with pure Being (*Seyn ist nichts*); or when the elements thus brought into juxtaposition absolutely refuse to coalesce into a single image, as in the case of a "round square." So, also, images of an inclosed space and of two straight lines, or of two and two and of five, will not flow into one; and *this incapacity of union is just as obvious the first time we form distinct images of them as the last*, the frequency of making the trial having nothing to do with the firmness of our conviction that the result cannot be attained. Yet Mr. Mill maintains that "we should probably have no difficulty in putting together the two ideas supposed to be incompatible, if *our experience* had not first inseparably associated one of them with

the contradictory of the other"; that is, the only reason why we cannot believe that two and two are five, is that we have been uniformly *accustomed* to think that they are four! Surely this is empiricism run mad, since it is more than the stoutest advocate of the doctrine, that all our knowledge of real things is derived from experience, needs to affirm. Experience itself is only an aggregate of intuitions; and if any one of these, taken singly, is not valid, the whole must be worthless. If a single intuition in imagination does not convince us that two and two are four — *i. e.*, are not five — then are we incompetent to affirm, on the like basis of a single intuition, that scarlet and crimson are both red — *i. e.*, are not blue or yellow. The compatibility or incompatibility of two given attributes with each other is a universal truth, even a necessary and immutable truth, which is often *grasped quite as firmly through a single intuition as through a multitude of experiments*; most of the primary truths of mathematics are of this character. But we cannot affirm any attribute generally of a whole class of real entities or existing things — *e. g.*, that all matter is heavy — except on the basis of multiplied experience; and such affirmation remains, at best, only a contingent truth. It is still possible that it should be falsified by further experience.

Mr. Mill admits that "we are unable to conceive an end to space;" but accounts for this want of power in his usual way, not by any inherent incapacity, but solely by the empirical fact, that "we have never perceived any object, or any portion of space, which had not other space beyond it. And we have been perceiving objects and portions of space from the moment of birth." Very well; so, also, we have never perceived any particular body, or aggregate of matter, which had not some other body near it. At least, it had near it the ground which it rested on, or the atmosphere in which it floated. Are we therefore unable to conceive a body absolutely isolated, — hanging, for instance, as many conceive the universe to do, in an otherwise void inane? Mr. Mill is the last person who ought to affirm such isolation to be inconceivable; for, as we shall endeavor to show, his own "Psychological Theory of Mind" leaves him, the author of it, just in this state of uncomfortable loneliness, without a being to talk to, or an earth

to rest upon, except his own sensations. Of course, he will reject this inference from his theory; since he is not so daringly consistent as his prototypes, Hume and Fichte, by both of whom it is frankly admitted. But he surely will not so far disclaim kindred with them as to assert that their hypotheses are not only unfounded, but inconceivable. He is but a tyro in metaphysics, who cannot so far enter into the scheme of Absolute Idealism, or Pantheism, as to be able to conceive The One as existing to the exclusion of all else.

While thus admitting that we cannot conceive an end to space, Mr. Mill strives to escape from Hamilton's dilemma, by affirming that our conception of Infinite Space is a real conception; that it "is both real and *perfectly definite*"; that "we possess it *as completely as we possess any of our clearest conceptions*, and can avail ourselves of it as well for ulterior mental operations." He seems to limit this assertion, indeed, by admitting that the conception is "not adequate;" but this limitation amounts to nothing, in view either of the passage which we have just italicized, or of the assertion which he immediately volunteers, that "we never have an adequate conception of any real thing." But his doctrine, as thus explained, involves him in a worse difficulty than that which he strove to shun. The want of experience, he tells us, is all that prevents us from conceiving space *as infinite*. Ought not, then, a corresponding want of experience to prevent us from conceiving space *as finite*? Or does Mr. Mill intend to maintain the not very intelligible proposition, that finite man has had experience of Infinite Space *as Infinite*?

As already remarked, we hold that Infinite Space, like Pure Being, is inconceivable from the first of the two reasons mentioned, — namely, from the want of any attributes, except negative ones, to be grasped together. Mr. Mill says it is *conceivable*. Will he inform us under what attributes he conceives it, whether as a pyramid, a cube, a sphere, or what other shape? whether as regular or irregular in outline, flexible or stiff, movable or immovable, colored or colorless? If it has none of these qualities, but is characterized only by the absence of all of them, will he tell us how a conception of *something which has no limits, no shape, no consistence, no*

mobility and no color, can still be "perfectly definite," possessed "as completely as we possess any of our clearest conceptions"? The question is an interesting one, as Mr. Mill is an ultra-Nominalist, thoroughly committed to the doctrine that a "Concept cannot exist in the mind except enveloped in the miscellaneous attributes of an individual;" that it must be such as to be depicted to sense or imagination, since "the existence of Abstract Ideas — the conception of the class-qualities by themselves, and not as embodied in an individual — is effectually precluded by the law of Inseparable Association." He does tell us that, in order to conceive Infinite Space, we have to "think away only the idea of an end or a boundary." So far, then, it is merely a negative idea, since we only know what it is not. Let him then decide how definite a conception he can give of *color* to a congenitally blind person, by informing him that it is *not sound*; or of *sound* to one who has never heard one, by saying that it is *not color*. It is only putting the difficulty in other words to say, that the congenitally blind cannot have any definite conception even of the *absence of color*, or the congenitally deaf of the *absence of sound*. Nay, according to Mr. Mill's own law of Inseparable Association, since all the objects within our experience have an end and a boundary, we cannot even conceive of that which has neither.

It is a transparent paralogism to urge, as Mr. Mill does, that we can even have a positive conception of Infinite Space, because we leave to it some positive attributes; — "we leave to it the character of space; all that belongs to it *as space*; its three dimensions," etc. The only question is, whether we can think Space *as Infinite*; and this is not answered by predicating certain qualities of Space *as Finite*, since the possession of these does not at all discriminate the Infinite from the Finite, which is the very thing that we are called upon to do. Mr. Mill simply tells us that space is space, whether it is Finite or Infinite; — which is not very important information in any respect, and not all to the purpose in our present inquiry. It is not even true, that we leave to the conception of Infinite Space "all that belongs to it *as space*;" for space consists of parts, while Infinite Space has no parts. If it had, the addi-

tion or abstraction of a *finite* part would increase or diminish infinity, which is impossible; and the very phrase, an *infinite* part, is a contradiction in terms.

We come now to the doctrine of the Relativity of Knowledge, a doctrine which has been presented under so many forms and in so many degrees, that a full discussion of it would carry us over nearly the whole ground of metaphysics. As understood by Mill, the Relativity seems to be tantamount to the Uncertainty of knowledge, and not merely to a limitation of it to the sphere of phenomena. But we would inquire, whether the existence of the phenomena themselves, as *phenomena*, or as appearances either in our minds, or somewhere else, and as relative to us or to our consciousness, is not certainly, and even absolutely, *known*? Do we not know them immediately and absolutely, — as they are in themselves, or in their several characteristics, being distinguishable from each other both in quantity and quality, since they have distinct attributes and qualities? Wherein, then, is the alleged inconsistency between the doctrine of the Relativity of Knowledge, and that of Real Presentationism, or immediate intuition of the Primary Qualities of body, these Qualities being directly presented to us — that is, being phenomenally *known* — as forms of the Non-Ego?

How do you know that your own sensations exist, or are actual? Why, because we have an *immediate* or *presentative* knowledge of them, as phenomena of our own minds, — that is, as mere subjective affections. But do we therefore have an *absolute* knowledge of them as such? If Mr. Mill says Yes, then he rejects that doctrine of Relativity which is equivalent to denying the Certainty of our intuitive knowledge of phenomena. If he says No, then there is an *immediate*, which is not an *absolute*, knowledge; and the whole ground for this particular criticism on Hamilton disappears.

But it is urged that the phenomena of sensation and emotion are “perceived or felt as facts that have *no reality out of us*,” while the phenomena of solidity and extension are “alleged to be perceived as facts whose reality is out of our minds and in the material object.” What of that? Our present question is, not whether these qualities *really exist externally*,

just in the mode under which they appear or are presented to our minds ; but whether they are *presented to us as so existing*. We are now asking — What these perceptions affirm, and in what manner they affirm it : — and not — Whether they affirm it truly. The phenomena of internal sensations and emotions, such as appetite, pain, and sorrow, appear or manifest themselves as mere subjective affections ; the phenomena of external perception, on the other hand, announce themselves through consciousness as modes of the Non-Ego intuitively apprehended ; — that is, as a direct and immediate, and not merely a vicarious or representative, knowledge of the qualities of external things. That they manifest themselves in this manner, — the former as subjective, and the latter as objective, — will hardly be denied even by those who affirm such manifestation to be illusive, — a mere *simulacrum*, in the latter case, of outness and objectivity. Neither will it be denied that the apprehension of the subjective and objective modes is equally immediate. When touched or pressed by some foreign substance simultaneously, or in quick succession, on two separate portions of the surface of my body at an appreciable distance from each other, — as on the shoulder and the hip, — I am directly conscious of the difference between *here* and *there*, and thus intuitively apprehend the extension of my own body, and the solidity of the substance in contact with it. Even if I am asleep and only dream of such impressions made upon me, still I do dream of them as such, — namely, *as objective and external affections immediately perceived*. But my knowledge of them *as objective* is only relative, as I shall find on awakening from the dream. We affirm, then, that the doctrine of the Relativity of Knowledge is perfectly reconcilable with that of Natural Realism, or the immediate perception of the Primary Qualities of body.

Mr. Mill vainly puzzles himself over Hamilton's often repeated assertions, that Extension and Solidity are known "*immediately in themselves*," and not merely "in their effects on us ;" and that they are "apprehended as they are in bodies, and not, like the Secondary, as they are in us." Very true ! They are *known* or *apprehended* BY US as such, or under that character. Whether they really possess that charac-

ter, apart from their appearance under the form of it to our minds, is another question. Our present inquiry concerns only the mode of their presentation to our minds, or of their apprehension by our consciousness, and does not even touch the point, how they are apprehended by minds differently constituted — for instance, by the Infinite Mind. Natural Realism, as we understand it, does not necessarily conflict with Berkeleyan Idealism, or with Malebranche's doctrine that we see all things in God ; though it certainly deprives those theories of some portion of their plausibility. It does conflict sharply with that dreary form of Idealism — more properly called Egoism, or Nihilism — which leaves a solitary "thread of consciousness" alone in the universe, acknowledging no power of efficient causation either in itself or out of itself, and reducing the universe, in fact, to a mere string of sensations following each other in a fatalistic connection, without beginning, end, or purpose.

The doctrine that the Primary Qualities are apprehended "*immediately in themselves*," and not merely "in their effects on us," will not appear irreconcilable with the assertion, that our knowledge of them is only Relative, to any one who considers the two perfectly distinct meanings of the phrase here italicized.

1. To know a thing *immediately in itself* is to be distinguished from knowing it only through an image or representation of itself ; the former is knowing it *per se*, the latter, *per aliud*. An instance of the former is my consciousness of present pain ; of the latter, my remembrance of a former pain.

2. To know a thing *immediately in itself* is also to be distinguished from knowing it only as it is in relation to our faculties. The former — if it were a possible cognition, which it is not — would be of the *Ding an sich*, the *noumenon* ; the latter is only of the *phenomenon*.

The doctrine of Natural Realism adopts the former of these two meanings ; it teaches that the Primary Qualities are known *in themselves immediately*, but *not absolutely*. Mr. Mill fails to distinguish the two, and, through his own confusion of thought, attributes a blunder to the philosopher whom he is criticising. For we maintain that this is not merely a

possible interpretation of Hamilton's language, but that it is clearly, and we had almost said unmistakably, his meaning. Witness the two following passages from the Dissertations Supplementary to Reid:—

“In the act of sensible perception, I am conscious of two things — of *myself* as the *perceiving subject*, and of an *external reality*, in relation with my sense, as the *object perceived*. Of the existence of both these things I am convinced; because I am conscious of knowing each of them, not mediately in something else, *as represented*, but immediately in itself, *as existing*. Of their mutual independence I am no less convinced, because each is apprehended equally and at once, in the same indivisible energy, the one not preceding or determining, the other not following or determined; and because each is apprehended out of, and in direct contrast to, the other.”

Here we are told *what* we are conscious of, and *how* the two things are apprehended. Our conviction of *the fact* of their *actual* existence is rightly stated merely as an inference from this their mode of *manifestation to us* — which inference, of course, though it may be called *knowledge*, is only *relative* knowledge. But that there may be no mistake on this point, Hamilton soon adds this explanation:—

“I have frequently asserted, that in perception we are conscious of the external object immediately and in itself. This is the doctrine of Natural Realism. But in saying that a thing is known in itself, I do not mean that this object is known in its absolute existence, that is, out of relation to us. This is impossible; for our knowledge is only of the relative. *To know a thing in itself or immediately, is an expression I use merely in contrast to the knowledge of a thing in a representation, or mediately.* On this doctrine, an external quality is said to be known in itself, when it is known as the immediate and necessary correlative of an internal quality of which I am conscious. . . . I cannot be conscious of myself as the resisted relative, without at the same time being conscious, being immediately percipient, of a not-self as the resisting correlative. In this cognition there is no sensation, no subjective-organic affection. I simply know myself as a force in energy, the not-self as a counter force in energy.”

We may well wonder how language so explicit as this could be misunderstood by a philosopher of so much acuteness as Mr. Mill.

The final sentence of this last extract is an admirably clear and simple statement of that fact of consciousness, in which we are assured both of our own existence as exerting force, or putting forth inborn power, and of its correlative, a counter force exerted against us by something which is *not ourselves*. The most distinct manifestation which we have of Self is this consciousness of the exertion of our own force; not the mere sensation of *muscular strain*, for that comes afterwards, and is contingent on the healthy action of the nervous and muscular organism. It is the direct perception of *mental effort* which constitutes what Hamilton calls "the *enorganic* volition;" not the "hyperorganic," which is merely meditating the act before willing it; nor the "organic," which is only contingent, because it may be frustrated by paralysis of the nerves, and is empiric, since it can be known only after experience. But the *enorganic* is the true *nisus*—the act itself, which is free, because neither external force nor inward temptation can elicit or check it; and, hence, it is this alone for which conscience holds us responsible. Man first becomes fully conscious of himself in this exercise of his free activity; because mere *thought* is passive, being subject to a law, that of the association of ideas, which is beyond his control. His *will* alone escapes law, mocks at external compulsion, and riots in the sense of its own freedom. The Cartesian axiom understates the truth, and should be modified; not mere thought, but volition, first fully reveals man to himself. When this free volition becomes organic, or is manifested externally through the muscles, it soon encounters resistance from without, or an external force counteracting it; and in this we first cognize the Not-Self, which we call *material*, though the fact that it, too, manifests force, induced Berkeley to consider it as *spiritual*. Hence, the only form of Idealism which escapes the dreary conclusion of Egoism—which does not leave the Idealist alone in the universe—is the Berkeleian. The Ego finds itself inclosed, and the exercise of its free activity restricted, within the limits of that covering of flesh in which it is, at least in idea, imprisoned; though within these limits, it "spreads undivided, operates unspent," in every fibre and atom. Through the numerous points of contact and resistance between the internal and

the external force which this embodiment supplies, and through its instinctive recognition of the difference between these points as *here* and *there*, Self becomes conscious of the extension of its own body, and hence, at once, of externality and the free space within which this body acts. As immediately apprehended by consciousness, *matter* is known only as a counter force in energy within certain limits of extension; and this spiritualized conception of it physicists themselves, on grounds afforded by their own science, are fast adopting with singular unanimity.

As contrasted with this clear and simple doctrine, Mr. Mill's Psychological Theory of Matter and Mind appears to us, we must confess, an elaborate failure. Misled by "the fatal charms of the goddess Necessity," to whose pursuit he has adhered with wonderful fidelity, he wanders far afield, and sits down at last hopelessly bewildered, in full view of phenomena, which, as he is obliged to admit, are on his theory entirely inexplicable. "So much the worse for them!" He prefers to leave the facts unexplained, rather than abandon his theory. A pretty cool admission this, in view of the grave rebuke which he soon administers to Hamilton, by declaring that "he is not entitled to frame a theory from one class of phenomena, extend it to another class which it does not fit, and excuse himself by saying, that if we cannot make it fit, it is because ultimate facts are inexplicable."

Denying any efficient causation, and resolving even the idea of Cause into mere uniformity of sequence, his "groups" of Sensations, and "Permanent Possibilities of Sensation," remain obstinately *subjective*, and refuse to assume even a decent semblance of a thinking Self, or of external realities. Each one testifies only to the fact of its own individual existence; and it does even this only in some unexplained and incomprehensible way. Rejecting, also, the idea of Substance, and explaining away our fancied notion of it into a mere Indissoluble Association, formed by long and uninterrupted habit, between certain Sensations always recurring near each other and in a fixed order, even his "groups" have only a factitious unity, and resolve themselves, under the keen eye of the analytical reason, into a mere heap of dry sand without any real cement to bind

the particles together. After making these large admissions, and also after being hard pressed by his critics, we are not surprised to find him driven at last to the frank confession, that he does "not believe that the real externality to us of anything, except other minds, is capable of proof." Whether, upon the principles of his own theory, the exception here made is a valid one, is a point for subsequent consideration. Meanwhile it is to be remarked, that the objective reality of Space itself is negatived by denying *outness*, which is its necessary condition. He admits, also, that "he has never pretended to account by association for the idea of Time," as he believes that the facts of simultaneity and succession are all that his theory needs to postulate.

He must be an intrepid reasoner, who still maintains the sufficiency of a method which leads to these disastrously negative results. These are the legitimate consequences of what Mr. Mill calls the "Psychological Method," which attempts to account for our supposed cognitions of Matter and Mind by resolving both into a mere series of sensations, which is, in some inexplicable manner, conscious of itself as a series, and the various parts of which tend, under the law of the association of ideas, to coalesce into groups. He challenges a comparison of this mode of procedure with the Hamiltonian, which he calls the Introspective Method — though it would be more properly called the Intuitive, since it asserts an immediate or intuitive cognition of both these realities, as original facts of consciousness. As the Psychological Method resolves both Matter and Mind into mere groups of sensations, we are not surprised to find such "metaphysical entities," or abstractions, as Cause, Power, Substance, Externality, Time, and Space, disappearing along with them; disappearing not only in fact, as unproved, but even in idea; since it is maintained that we have no distinct conception of what these words denote.

Now, it is only under these very forms and abstractions — if we may not call them "entities" — as invested with them and manifested through them, that both the Self and the Not-Self are presented to consciousness. And the Psychological Theory has to explain the origin of these seemingly intuitive cognitions *as thus presented*, in all their characteristics; not only

in their most naked and abstract form, as merely contradistinguished from each other; but as conditioned and limited by Time and Space, as acting and reacting upon each other by their Causal efficiency, and marked off, so to speak, into two distinct realms of consciousness by belonging, apparently, the one to an inner, and the other to an outer, world. Mr. Mill adopts as his criterion of truth, not the testimony of consciousness, however seemingly immediate and primitive, but the greater or less plausibility of any theory which may be framed respecting the manner in which consciousness was first induced to put on this illusive semblance of immediateness and originality. He thus denies that we can know by intuition whether any cognition is or is not intuitive; which is only a roundabout mode of denying that any truth or fact can be intuitively known. He makes reasoning the test of intuitions, instead of intuitions being the test of reasoning. We maintain that intuitions can be at once cognized as such — that is, can be immediately distinguished from empirical and derivative truths or facts — by these two marks or tests: — 1, by their character of necessity, their contradictory being inconceivable or unimaginable; or 2, by their being necessary elements of experience, so that without them experience itself would not be possible. Let us apply both these criteria.

I. We maintain that Extension or Space is made known to us by direct intuition, in the manner just explained, by distinguishing *here* from *there* on the surface of our own bodies. We say this cognition is intuitive, both because it presents itself as such to our consciousness — that is, as immediate, since we certainly are not conscious of deriving it, either by inference or by composition, from antecedent cognitions; and because it possesses the first of the two criteria just mentioned, viz., necessity; for when we have once conceived and affirmed the existence of Space, we find ourselves utterly unable to conceive its destruction, or imagine its non-existence. We can with the utmost ease imagine not only the disappearance, but the annihilation, of all the material objects now occupying a given portion of space; but this space once so occupied utterly refuses to be reduced to a nonentity, even in imagination. To take an instance more pertinent to our discussion with Mr.

Mill; — though a lifelong association, an experience repeated every instant of my whole life, connects *me* with my own *body* — that body a suggestion from which furnished the occasion on which the idea of space first rose into my mind — I can with ease imagine the dissolution, and even the annihilation, of every particle of my body. But even the smallest portion of the space now occupied by this body flatly refuses to be annihilated, even in idea. The parts of space, then, present themselves to intuition as necessarily indestructible; as external, not only to the perceiving mind, but to each other (*partes extra partes*); as immovable and so inseparable from each other; and as a condition of the existence of matter. Am I asked, on what authority it is affirmed that space possesses all these properties? The answer is plain; on the authority of Intuition. If he considers the subject for a moment, every person's consciousness will assure him that he conceives space as possessing every one of these attributes.

Thus, then, the Intuitional or Introspective Theory accounts for the genesis of the idea of Space, with all the characteristics now enumerated. On occasion of a trival and oft-repeated experience — the casual contact of some foreign substance with two distinct portions of my body, the idea spontaneously rises in my mind, and subsequent reflection assures me that it possesses each of these attributes. How does Mr. Mill solve the same problem on the principles of his Psychological Theory? It is difficult to consider the points of his answer with gravity, or believe that he is serious in propounding it.

Remember that he has no material to work with but present and remembered Sensations, occurring either singly or in groups; the action of Association in binding the members of these groups firmly together, even causing them at times to coalesce into one; and Expectation, under given circumstances, of the recurrence of similar groups, thus forming what he calls "Permanent Possibilities of Sensation." Our whole knowledge of these Sensations and groups, whether in their simple state, or as modified by Association and Expectation, is limited to their coexistences and sequences, and their similitudes. What chemistry will enable Mr. Mill to transmute any one, or any combination, of such materials into the idea of indestructible, external, immovable, eternal, and infinite Space?

Recapitulating his theory, he says: "The sensation of *muscular motion unimpeded* constitutes our notion of *empty space*, and the sensation of *muscular motion impeded* constitutes that of filled space. Space is Room — room for movement." And, in further explanation of his theory, he affirms: "that the idea of Space is, at bottom, one of Time — and that the notion of extension or distance is that of a motion of the muscles continued for a longer or shorter duration."

The objections to this theory are numerous and patent.

1. Before we have the ideas either of *outness* or of *space*, how do we know that *motion* takes place, or even what *motion* is? The only possible conception of motion is that of transference from one part of space to another; and it is therefore inconceivable, unless we already know what space is. An idea cannot beget itself.

2. As, on this theory, we only know the Sensations and the order of their occurrence, how can we know that certain Sensations are caused or produced by motion? Mr. Mill rejects the notion of efficient, or real, *cause* altogether, substituting that of *invariable antecedent*. Then we must first have an antecedent sensation of motion, and know it as such, before we can know the consequent sensation to be one of motion. Then again, the child is supposed to be its own parent.

3. If, before having the idea of space, I can know that certain sensations are caused by motion, then, since a knowledge of motion presupposes a knowledge of the *locus a quo* and the *locus ad quem*, I must certainly be able, antecedently to experience, to localize sensations in my own body as *here* or *there*; which Mr. Mill vehemently denies, since admitting such a power would be admitting the truth of the opposite theory.

4. If "the idea of space is at bottom one of time," and if, "when we say that the space is greater or less, we mean that the series of sensations (amount of muscular effort being given) is longer or shorter," then the sensations produced by merely supporting continuously, for some time, with great muscular exertion, a considerable weight, though I stand stock still while so doing, ought to give the ideas both of motion and of space equal in extent to the duration of the effort. Here are all the elements necessary, according to Mill, for the genesis of the two ideas; yet neither idea is generated.

5. Consecutive points regarded as existing simultaneously — that is, *before* and *after*, as elements of *extensive* length — are rightly held to generate, or rather to constitute, the idea, not merely of succession, but of space. But a succession of *events*, one passing away when the next follows, — that is, *before* and *after* as elements of *protensive* length, — is regarded as giving us an idea only of succession, not of time. Mill seems to reject altogether the objective conception of “an entity called Time, and regarded as not a succession of successions, but as something *in* which the successions take place.” Then, the one kind of succession (simultaneous) does give us the idea of Space, but the other kind (protensive) does not give us the idea of Time; and yet “the idea of Space is at bottom one of Time,” and, only by the duration of the effort, do we become conscious of the extent of Space. How, then, does he measure “duration,” or what means “duration,” except existence continued in Time?

6. Why should the idea of Space, even if constructed as Mr. Mill would have it to be, be that of an *external* and *indestructible* entity, existing independently of our conceptions, when all its elements are internal and contingent? True, he does not believe in the *externality*; or rather, he believes it is not “capable of proof.” But he must admit that we have an idea of it; and he is bound to show how this idea was generated.

It does not appear, then, that “The Battle of the Two Philosophies,” in regard to the idea of Space, has terminated in a victory for Mr. Mill.

II. As an example for the application of the second criterion of an intuitive truth known as such, — that of being a necessary condition of experience, so that, without it, experience would not be possible, — take the direct cognition by the thinking subject of *himself* as exerting force. Here we are sorry to part company with Hamilton, Reid, and Stewart, though Mr. Mansel is on our side. We maintain, with the last named, that in every act of consciousness, but especially in that of volition, we are directly conscious, not only of the action, but of the agent; not only of the force exerted, but of Self as exerting force. The action could not be known at the moment to be *mine*, as it unquestionably is, if one and the

same act of mine did not cognize both the Ego and the effort. I could not know *hunger*, if I did not, at the same moment, know *Self* as feeling the hunger; for knowledge is a relation between the Subject, or the Self-knowing, and the object known; and even Mr. Mill admits that assuredly a relation cannot "be thought without thinking the related objects between which it exists." In the case of Matter, reasoning from the *attributes* to the *substance* is a proper inference, that being inferred which is not directly known or perceived. But in the case of Mind, we pass from *actions* to the *agent*, which is no *inference* at all, but a mere descent from an abstraction to a reality, — the object of immediate knowledge being, not the act, but the person acting.

For these reasons, we affirm that Self is an immediate and original presentation of consciousness. Mr. Mill's doctrine is, that Self is only a factitious unit, made up by experience and association out of previous sensations. We apply to this doctrine the second criterion, and maintain that a cognition of Self is a prerequisite or condition of experience, so that, without it, no experience whatever would be possible. Before Mr. Mill can make any use of his psychological chemistry, before he can even apply association to cement his materials together, he must know that these materials exist. His theory postulates Sensations; but it needs to postulate *known* sensations — known either as now existing, or remembered as former objects of knowledge. But any act of knowledge involves a cognition of the subject knowing, as well as of the object known. He admits this fact in another place, where he says, "*The contrast necessary to all cognition is sufficiently provided for by the antithesis between the Ego and particular modifications of the Ego.*" But when arguing to prove that the Ego is not an original presentation of consciousness, he forgets this admission, and denies that a "mere impression on our senses involves, or carries with it, any consciousness of a Self;" and asserts that "our very notion of a Self takes its commencement, there is every reason to suppose, from the *representation* of a sensation in memory." Now, it is very easy to believe that we should remember *less*; but how came we to remember *more*, than we originally knew? If the orig-

inal *presentation* of the sensation did not contain the Ego, how can the *re-presentation* of the same fact contain it? But still worse: the first "mere impression on our senses," since it does not involve "any consciousness of a Self," is no sensation — no cognition at all; for "the contrast necessary to all cognition" is the antithesis between this very Ego and its particular modifications. Apparently, Mr. Mill thinks he had a sensation before he was born, or even conceived. We say again, then, that by denying the original presentation of the Ego in consciousness, he has made experience impossible, and thereby burned up all the materials he had to work with, his "Psychological Theory" of Matter and Mind perishing in the same conflagration.

Mr. Mill also denies any "enorganic volition," considered as a conscious putting forth of energy by the thinking subject, either antecedent to, or wholly apart from, the sense of any muscular strain. As a necessary part of his doctrine of Necessity, he does not admit a mental, but only "an animal *nisus*," as Hume calls it, which, Mr. Mill says, "would be more properly termed a conception of effort." He affirms, still more distinctly, that "the idea of Effort is essentially a notion derived from the action of our muscles, or from that combined with affections of our brain and nerves." This doctrine will not appear very probable to any one who has "made an effort" to confine his attention to a dull book; or to banish gloomy thoughts; or to keep down an expression of severe pain; or to call up courage to face danger; or to remember a half-forgotten message; or to repress anger; or to do half a hundred other things, in which mere muscular strain has as little part to play as in working out a formula by the binomial theorem. In fact, this doctrine is so extravagant, that Mr. Mill himself forgets that he has been pushed into affirming it, and informs us, in another place, that the formation of a concept "*requires a mental effort, a concentration of consciousness upon certain definite objects, which concentration depends on the will*, and is called Attention. And again he says, the consciousness of certain elements of the concrete idea "is faint, in proportion to the *energy of the concentrative effort*." *Naturam expellas furca*. Mr. Mill's vigorous common sense

will show itself in spite of his own theories, when the necessity of defending these theories is not immediately before him.

In another passage, the difficulty of maintaining this very untenable doctrine seems to deprive him of his usual precision and caution in the use of language, and in statements of fact. He questions Hamilton's assertion, that we are conscious of a mental effort, or *nîsus*, to move — distinct both from the original determination to move, and from the muscular sensation, — even though stupor of the sensitive nerves, and paralysis of the motor nerves, render both the feeling of the movement, and the movement itself, impossible; and he adds, "If all this is true — though by what experiments it has been substantiated we are not told — it does not by any means show that there is a mental *nîsus* not physical, but merely removes the seat of the *nîsus* from the nerves to the brain." "A mental *nîsus* not physical!" Will Mr. Mill inform us, what is a *mental nîsus* that *is* physical? The expression seems very like a contradiction in terms, unless he now intends to teach that *all* the so-called "mental" phenomena are really physical, thus adopting one of those "ruder forms of the materialist philosophy" against which he so vigorously protested in his "Logic," as pretending to resolve "states of consciousness into states of the nervous system." He surely does not mean to assert, that a purely mental act, which is antecedent to, and wholly distinct from, any muscular sensation, is accompanied by immediate consciousness of action in the brain. And, if we are not conscious of brain-action in such a case, will he tell us what physiological experiments have proved that, in the case supposed, there is any such action?

The so-called "Psychological Theory" resolves both Matter and Mind into Permanent Possibilities of Sensations. As Mr. Mill says we cannot prove *either* of these possible groups to be really external, or to have any external cause or antecedent, it is not easy to see why one of them should be called Matter, and the other be baptized Mind; or why the two supposed entities, that are thus named, should be so broadly distinguished from each other, as they are in most people's apprehension of them, when, in fact, they are both made up of

the same sort of elements, put together by the same process of mental chemistry. Why should it be even thought that the one is necessarily external, and the other internal? Moreover, we can find a reason why certain sensations should be put into the one group that is called a *material* object, for they are simultaneous; at the same moment, I may see the color, smell the odor, taste the savor, and feel the shape and hardness, of the one object which I call an apple. But we find no reason why the other phenomena should be formed into a group at all, since they are not simultaneous, but successive, and often separated from each other by rather long intervals. Why should the phenomena of "knowing, feeling, desiring," etc., be selected from the countless other manifestations in consciousness, in order to make up the factitious unit called Mind or Self, when they appear in every possible order, sometimes together, sometimes separate, and always more or less jumbled up with external sensations? Some of the modifications of one of them, such as joy, anger, pain, sorrow, love, and the like, may be even of very infrequent occurrence. Why should they be selected as elements of the second group, or of any group, except from a previous or accompanying Intuition, that these alone are States or Modifications of a real unit or entity which I call Myself, and also from an Intuitive apprehension of that difference, which the "Psychological Theory" cannot make out or account for,—the difference between *internal* and *external*.

"Dic, sapiens Milli, et eris mihi magnus Apollo."

"Matter, then," says Mr. Mill, according to his "Psychological Theory," "may be defined a Permanent Possibility of Sensation. If I am asked whether I believe in matter, I ask whether the questioner accepts this definition of it. If he does, I believe in matter; *and so do all Berkeleyans*. In any other sense than this, I do not. But I affirm with confidence, that this conception of Matter *includes the whole meaning attached to it by the common world*, apart from philosophical, and sometimes from theological, theories."

Here is an implied assertion, that his definition of Matter coincides with Berkeley's doctrine of Idealism; and a direct

assertion, that it includes the whole meaning attached to the conception of Matter by ordinary people, who are neither philosophers nor theologians. We dispute both positions. Bishop Berkeley affirms the necessity of a Cause, an Efficient Cause, to account for the ideas or sensations in our minds; and as he says "there is nothing of power or agency" in the ideas themselves, as "it is impossible for an idea to do anything, or, strictly speaking, to be the cause of anything," he has a right to conclude, as he does, "there is therefore some cause of these ideas, whereon they depend, and which produces and changes them." This cause he elsewhere affirms to be a mind or spirit, since he can have "no notion of any action distinct from volition, neither can I conceive of volition to be anywhere but in a spirit;" therefore, "I assert as well as you, that since we are affected from without, *we must allow powers to be without, in a being distinct from ourselves.*" The ideas imprinted on my senses, he argues further, "are not creatures of my will; there is, therefore, *some other will or spirit* that produces them." Berkeleyan Idealism, then, affirms the principle of causality, and thereby proves the existence of a Not-Self, — of a Divine mind, and other human minds besides my own; it denies *material* substance, but affirms *spiritual* causation and the efficiency of volition. Mr. Mill repudiates Efficient Causation altogether; and by admitting the existence only of Sensations and Possibilities of Sensations, he unpeoples the universe, and leaves his single "thread of consciousness" alone in creation. Berkeley spiritualizes Matter; Mill annihilates it.

The progenitor and sponsor of Mill's system is not Bishop Berkeley, but David Hume, who taught that "nothing is ever present to the mind but perceptions," and that "it is impossible for us to conceive or form an idea of anything specifically different from ideas and impressions." Setting aside some metaphysicians, he thinks he "may venture to affirm of the rest of mankind, that they are nothing but a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement." "The mind," he affirms, "is a kind of theatre, where several perceptions successively make their ap-

pearance, pass, repass, glide away, and mingle in an infinite variety of postures and situations. There is properly no *simplicity* in it at one time, nor *identity* in different [times]; whatever natural propension we may have to imagine that simplicity and identity. The comparison of the theatre must not mislead us. *They are the successive perceptions only that constitute the mind*; nor have we the most distant notion of the place where these scenes are represented, or of the materials of which it is composed."

Just as little can the "Psychological Theory" be sheltered under the common opinion on this subject entertained by the vulgar. Ordinary people certainly attribute their sensations to some Cause operating upon their organs *from without*; and this Cause they believe to be *something*, they know not what, the unknown seat or substratum of the qualities which affect their senses. The notions of Efficient Cause and Substance, far from being mere "metaphysical entities" excogitated by a few philosophers and theologians, must be classed among the most primitive and familiar impressions and beliefs of the great bulk of mankind. Mr. Mill's doctrine is the metaphysical refinement; that which he impugns is the common belief of all men, except a few philosophers.

Whatever evidence there may be, on the ordinary or Intuitional theory, "that I have any fellow-creatures, or that there are any Selves except mine," says Mr. Mill, "exactly that same evidence is there" of the existence of these other Selves on the Psychological Theory. We deny that his doctrine affords him any such evidence, or even authorizes him to trust his memory, to admit his own personal identity, or to entertain any expectation whatever. If we know nothing but sensations or feelings, occurring singly or in groups, together with their sequences, coexistences, and similitudes, and are not at liberty to assume any *cause* for these phenomena, other than their invariable antecedents and concomitants, then we cannot *know* even the poor "*thread* of consciousness" to which Mr. Mill has reduced his own individual being. His own Mind may be a string of beads, but it is one which is constantly slipping through his fingers, since he grasps it only by one bead at a time, neither the past nor the future being

in any manner *present* to consciousness. We have no better right to infer *the actual existence* of the Past from a present consciousness which merely *represents* that Past, than we have to infer *the existence* of the table, as an external reality, from the consciousness of the sensations which we believe the table excites. On this point, Hume is consistent and logical, while Mill is the reverse. If Perception, which is a continuous phenomenon, the sensations abiding till we voluntarily turn away from the object that produces them, — if Perception, we say, plays us false, what better guaranty have we of the faithfulness of Memory, which is avowedly nothing but a mental picture, a mere representative image, and comparatively a faint one, of what is past and gone? The cardinal feature of Mr. Mill's theory is, that a phenomenon avouches incontestably nothing but its own phenomenal existence and characteristics. We might as well admit our own causative energy, though, according to Mr. Mill, we have direct evidence only of the effects produced by it, as admit the reality of a Past, of which only an adumbration now floats before consciousness. The irresistible character of the belief which accompanies it is no valid evidence before the court where Mr. Mill presides; such testimony, in the case of Perception, he rules out without ceremony.

Besides the permanent group of Possibilities of Sensation, which he calls his own body, Mr. Mill argues that there are other similar groups, representing other human bodies, each exhibiting a set of phenomena such as he knows, in his own case, to be effects of consciousness, "and such as might be looked for, if each of the bodies has really in connection with it a world of consciousness." But, to him, these groups are only *forms of the Ego*, and cannot be resolved into a Non-Ego, except by admitting the doctrine of Efficient Causation, or of immediate perception, or of that irresistible but inexplicable belief which is only another name for *knowledge*, or of an *a priori* law of thought. Through dwelling upon the doctrine that Matter is only a name for an aggregate of possible sensations, he has so far objectified the group in his own conception of it, as to forget the subjective character of all the elements of which it is composed. But it is objectified only in

thought; it is a mere subject-object. A Possibility of Sensation is only his *expectation* (a pure state of his own mind), that the given Sensation (another mental state) will revive under certain circumstances.

Mr. Mill was betrayed into the inconsistency of admitting "memories and expectations" into that thread of consciousness which composes the mind's phenomenal life, through the exigencies of the case; for, of course, without remembrance and anticipation, no inductive reasoning would be possible, and there would be no experience beyond that of the present moment. This is the gulf of utter scepticism into which Hume willingly plunged. Mr. Mill struggles bravely to get out of it, but his own consistency must be sacrificed before he can gain foothold on the solid ground above. For what are these "memories and expectations?" "In themselves," he rightly says, "they are present feelings, states of present consciousness, and in that respect not distinguished from sensations." But he adds, "They all, moreover, *resemble some given sensations or feelings, of which we have previously had experience*;" and each of them, also, "*involves a belief in more than its own present existence.*"

How does Mr. Mill know that they "resemble" some of our former sensations, since these previous phenomena are not now before us? And what guaranty has he of the validity of that "belief," by which they are accompanied? True, they affirm such resemblance, and assert this belief. But Mr. Mill, in other cases, has refused even to listen to such allegations. The presence of the sensation is an immediate datum of consciousness; but the validity of any knowledge, assertion, or belief implied in that sensation, or inseparately associated with it, is not an immediate datum of consciousness, and cannot be admitted without building up again that real objective world, both of Matter and Mind, which the "Psychological Theory" has resolved into a mere dream. There is no reason, then, why Mr. Mill should hesitate, at the last moment, to carry out his theory of the Mind or Ego to its farthest consequences. There is no "inexplicable fact" in the case. The presence of alleged "memories and expectations" in the series ought not to have perplexed him, any more than the presence of alleged "perceptions."

We can learn that another mind is acting near us only from sensible evidence of the presence and actions of another body — a tall, featherless biped — now affecting our faculties of sight and touch. Taking for granted the actual existence of this biped, Mr. Mill argues that the similarity of its outward form and actions to those of my own body, and my consciousness that *my* actions are connected with *my* thoughts and volitions, authorize me to conclude, by legitimate inductive evidence, that the biped's actions are connected with *his* thoughts; that he, also, has a Mind. Furthermore, he affirms, that having supposed the biped possesses thoughts and feelings similar to my own, "I find that my subsequent consciousness presents those very sensations, of speech heard, of movements and other outward demeanor seen, and so forth, which, being the effects or consequents of actual feelings in my own case, I should expect to follow upon those other hypothetical feelings [of the biped], if they really exist; and thus the hypothesis is verified."

But this argument is open to two fatal objections.

1. What right have I to take for granted the real presence before me of *one* mass of matter — *the biped*, — when I deny the real presence of *another* aggregation of matter — *the desk*, — the evidence for the existence of the two being avowedly the same, — namely, the existence of a group of sensations, and believed possibilities of sensations, in my own mind; or, rather, the existence of them *somewhere*, though in no definite locality; since Mr. Mill is by no means sure of the reality of his own Mind or Self, and does not believe the real externality to us of anything, "except other minds?" It seems a paradoxical distinction, by the by, to assert the externality — that is, the existence in space — of other *minds*, and to deny the externality of all *bodies*, his own included.

2. The correspondence of the relation between the observed actions and supposed feelings of the biped with the relation between my own actions and feelings, can be affirmed only on the ground of my *remembrance* of the manner in which I acted and was affected on a previous occasion, when the circumstances were similar. To borrow an illustration adopted by Mr. Mill from one of his critics, if the biped screams when he

cuts his finger, I can infer that he feels pain, only because I remember what my own feelings were, some time ago, when I experienced a similar accident. But Memory, we repeat, is a witness that has been turned out of court, and cannot bear witness to the similarity either of the feelings, or of the circumstances that generated the feelings.

Mr. Mill repeatedly charges his critics with inability to think themselves fully into the theory which they deny, or to form that accurate and entire conception of it which is necessary before it can be fairly judged. We fear the accusation may be retorted ; for it does not seem that he himself is always fully aware of the narrowness of the basis on which his theory rests, and of the consequent difficulty of enlarging it enough to meet all the exigencies of the case. He does not always remember that, to him, the universe must be contained within the limits of his own consciousness at any one moment. He has before him, not a record of the whole, or any considerable portion, of the history of his consciousness, but only an almost momentary glimpse of its condition and contents at the instant of observation, this picture fading out entirely when succeeded by another of the series. That some of these states of his own mind report themselves, when thus observed, as "memories" and "expectations," is a fact of no more importance than the corresponding one, that others give themselves out, with equal strength of assertion, as "internal" and "external" states of consciousness, or as forms of the Ego or the Non-Ego. He must admit that imagination can simulate the Past at least as perfectly as the Present. The "expectation" cannot even be justified by the subsequent event; for when that event comes round, the expectation of it already exists only in memory.

Let us now go back for a moment to Mr. Mill's doctrine of empiricism, — to his attempt to account for the presence of necessary and universal truths in the human mind, not by tracing them, after the manner of Leibnitz and Kant, to a *priori* laws of human thought, but by trying to generate them from experience through the law of Inseparable Association. It is unlucky that he allows himself to be so far heated by opposition as to lose caution in the statement of his extreme opin-

ions, and to express himself in a tone of far more confident dogmatism about those doctrines which he espouses against the authority of nearly all the great metaphysicians of an earlier day, than on those points where the authority both of philosophers and of the world at large is certainly in his favor. In this respect, he often reminds us of Hobbes, who was never more vehement and dogmatic than in defending his solution of the difficulty of squaring the circle. We have had one amusing instance of this peculiarity on the part of Mr. Mill, in his sweeping and almost fierce statement of the conceivability of Infinite Space. The following is intended to be an equally resolute and thorough-going expression of the doctrine of empiricism: "As for the *feeling* of necessity, or what is termed a necessity of thought, it is (as I have already observed), of all mental phenomena positively the one which an inseparable association is the most evidently competent to generate." When a disputant has thus gallantly thrown away the scabbard, it seems almost a pity to remind him, that his very statement of the question precludes the possibility of his finding an opponent. Of course, if two ideas are *inseparably* associated, it is a "necessity of thought" to think them together; one might as well declare, with great emphasis, that two and two *do* make four. The real question is, whether mere experience of the simultaneity, or immediate consecutiveness, of two thoughts can be so uniform, and so many times repeated, as to make it impossible to think one without the other; or, in other words, to generate an *inseparable* association between them. Mr. Mill affirms that it can; Leibnitz, Kant, Hamilton, and many others, say that it cannot.

The Leibnitzian doctrine is well expressed by Mr. Mansel, "that whatever truths we are compelled to admit as everywhere and at all times necessary, must have their origin, not without, in the laws of the sensible world, but within, in the constitution of the mind itself." All attempts, he adds, to trace such cognitions to experience and the association of ideas are vain, "*because other associations, as frequent and as uniform, are incapable of producing a higher conviction than that of a relative and physical necessity only.*" As Mr. Mill admits

the fairness and sufficiency of this test, the question is one which can be, at least in part, decided by an appeal to facts.

A necessary conjunction of two phenomena or ideas is one the separation of which is impossible *even in thought*. A necessity of *thinking*, and not of merely *acting* or *feeling*, in a certain manner, is what we are now concerned with. Hamilton asserts that "the necessity of so *thinking* cannot be derived from a custom of so thinking," and that "the customary never reaches, never even approaches, to the necessary." Mill cites in reply the instance of the paviour, who "cannot" use his rammer without crying "ha!" and of the orator, who was unable to speak without twirling a string round his finger, as "examples of a customary which did approach to, *and even reach*, the necessary." We submit that both cases are irrelevant, since the alleged inability was only one of *acting* without the usual trick, while both parties were perfectly able to *imagine* themselves acting either with or without the ordinary accompaniment. Equally irrelevant are the instances cited of irrepressible emotion produced by revisiting the scenes where great fright or great sorrow had been experienced; the very effort the sufferers made to control their feelings proves that they could and did *imagine* this effort to be successful.

1. Two straight lines, which are parallel in any portion of their length, cannot meet, *however far extended* in either direction; that is, cannot inclose a space. This is an absolute necessity of thought, since its contradictory cannot even be imagined. Moreover, it is easily cognized as necessary, even by a youth who has just been so far introduced to the mere elements of geometry as to fully know what parallelism means; who has consequently had comparatively little experience, either through his senses or his imagination, of parallel lines; who has never seen or imagined such lines extended, except to a very short distance; and who, indeed, has been most conversant with apparent exceptions to the truth, as in looking up a long street, bridge, or railroad, where perspective *seems* to bring the two lines together. Here, then, is a necessary truth preceded by so little experience that it cannot have been generated by association.

2. On the other hand, uniform experience, repeated almost

every moment of our lives, assures us that all bodies gravitate, so that, (in the case of terrestrial bodies,) if left unsupported, they fall or sink to the ground or bottom; and the *apparent* exceptions to this law, as in the case of a balloon rising in the air, and of corks or other light substances, perhaps simulating stones in appearance, continuing to float in water, are few and infrequent, and are so easily and fully explained away, that they are properly classed with those exceptions which confirm the rule. Yet it is perfectly easy to *imagine* the contradictory of this law, — that material substances should not fall, but remain suspended in space; or, if they did move, that they should not fall *downwards*, but sidewise, in any horizontal direction, or upwards. Even Mr. Mill admits that he can without difficulty “form the imagination of a stone suspended in the air.” In this case, therefore, unbroken and multiplied experience does not create any necessity of thought.

Now observe the inconsistency of Mr. Mill’s reasoning upon these two cases, so obviously incompatible with his theory. He says, that my inability to conceive of two parallels meeting is not removed by witnessing numerous cases of the *seeming* convergence of two such lines; because further experience, or a moment’s consideration, explains the illusion of the apparent, but unreal, coming together of the lines. Very well; then illusory appearances to the contrary, if easily explained away, do not so break the uniformity of the association as to prevent it from becoming indissoluble. And yet, in the case of the stone falling to the bottom of the water, he affirms that our seeing light substances simulating stones continue to float, though readily accounted for, is enough to vitiate the otherwise uniform testimony of experience, and therefore to prevent the inseparable association from being formed. It is a poor rule that will not work both ways. Why does not the correction of the mistake, and the consequently proved fact that the testimony of well-understood experience is really all on one side, create an impossibility of conceiving the other side in the case of the stone, as well as in that of the parallel lines?

We are now prepared to examine Mr. Mill’s mode of explaining the genesis of that necessity of thought which we call the universal Law of Causation. It is an irresistible and

universal belief, that every event, every change, which takes place in the outer world, must have a Cause. "In the outer world," we say, wishing to avoid, for the present, the dispute as to the universal applicability of this law to the phenomena of Mind. But no one disputes, no one *can* dispute, the necessity of believing that, in the case of Matter, no change can take place without a Cause. Mr. Mill attempts to resolve this law into mere Invariability of Sequence. Uniform and oft-repeated experience, he says, has assured us that, "for every event, there exists some combination of objects or events, some given concurrence of circumstances, positive and negative, the occurrence of which will always be followed by that phenomenon." Such experience, according to his theory, creates an Inseparable Association in the mind between any event whatever, and *some* Invariable Antecedent of that event. No matter whether we have yet discovered the proper Antecedent of this particular phenomenon, or not. The mere association of ideas, created by the frequency and uniformity of experience in similar cases, makes it impossible for us not to believe that *there is* such an Antecedent, such a conjuncture of circumstances, special to this phenomenon, to be found somewhere.

We are not now considering the objective validity of this Law of Causation. We are now inquiring only about the origin of that necessity *of Thought* which compels us to *believe* that there *must be* such a Cause, or such an Invariable Antecedent, for every phenomenon, whether it has yet been discovered or not; a necessity *of Thought* which is just as incumbent upon the thickest skulled rustic as upon the man of science, upon the boy as the man, upon the religious mystic as the hard-headed infidel; which governed the thoughts, and thereby the actions, of men, just as absolutely and universally before the time of Galileo and Bacon, of Archimedes and Aristotle, as it does at the present day. Tell the dullest clodhopper, or the clodhopper's youngest child, that the chair has fallen down, or the light has been extinguished, or the pitcher has been broken, or the paper has taken fire, "without a Cause," and, if he understands the meaning of your words, he will believe that you are making game of him. Show him any strange phenomenon on the earth, or in the skies, and

his first inquiry will be, — “What makes it so? What causes it?”

We maintain that this class of persons, the ignorant and unthinking, *cannot have had the uniform and frequently-repeated experience, which alone could create in their minds an indissoluble association* between any new phenomenon and some one antecedent, or group of antecedents, of which it is the special and invariable consequent. Nature does not reveal the constancy of her operations to unpractised eyes at the first glance. She rather oppresses the untaught mind with a sense of her infinite variety, her ceaseless vicissitudes, her inexhaustible fertility of forms and diversity of motion and operation. Take the phenomena which lie the nearest, so to speak, to human life and conduct: the phenomena of the weather; of health and disease; of good and bad fortune; of the character and conduct of individual men; of the infinitely varied forms and aspects of the vegetable and animal creation, and the contingencies to which they are subject. Not without reason were the earliest systems of religion, devised by un instructed intellects, always polytheistic, such minds naturally seeking causes as numerous and diversified as the effects attributed to them, finding a prototype of nature's action only in the endless inconstancy and caprice of a semi-human will, and therefore peopling the mountains, forests, rivers, seas, and skies with an innumerable crowd of arbitrary deities. Surely the most extravagant and unreasonable of all systems of philosophy is that which would attribute the universal and irresistible belief in the necessity and uniformity of Causation, to men's unenlightened experience and casual observation of the workings of nature. Such a belief, could it be formed at all in the mode here indicated, would be the latest product of a mind deeply imbued with the principles and results of modern physical science. It would be natural to man only in the same sense in which every man is naturally an expert in the differential and integral calculus.

The empirical theory of Causation is a necessary part of that doctrine of universal scepticism, according to which there is no real being, no universe of actual existence, outside of the individual thinker's own consciousness for the present mo-

ment. Efficient or real Causation can take place only in a real universe, where there is something to act, and something to be acted upon or produced; in an imaginary universe, a sphere of mere thought, such Causation is a mere dream. If that which is called a real "object" is only a group of actual and possible sensations, the object supposed to be a "cause" being one of these groups, and that called an "effect" another, then the relation between cause and effect is only the usual relation between two immediately consecutive thoughts, — a relation of mere customary sequence, by virtue of which one suggests the other, without having the slightest real *power* or causal efficiency over that other.

But it was long ago remarked, that any scheme of universal scepticism is incoherent, self-contradictory, and suicidal. It is either a baseless assumption, or it is grounded upon reasoning which cannot proceed a step without taking for granted the very intuitions, or fundamental truths, which the sceptic affects to deny and disprove. *That* in reasoning which connects the premises with the conclusion, or, in other words, that alone which makes us believe the conclusion, is a Law of Thought, or an absolute truth intuitively discerned, which, as a ground of belief, is not one whit stronger — nay, is not so strong — as that other necessity of Thought, or immediate intuition, — call it what you please, — which compels us to believe the reality of the Ego, of an Efficient Cause as a Non-Ego operating upon me from without, and the externality, indestructibility, and infinity of the Space in which the Non-Ego exists. As all reasoning is based upon necessities of Thought, it cannot be used to disprove them; since the conclusion thus obtained affirms the falsity of the premise whence it was drawn, and we should thus be involved in a perpetual see-saw, as in the famous sophism of Epimenides.

We now pass to that portion of Mr. Mill's work which is the principal arena for "the Battle of the two Philosophies;" — to his chapter upon the Freedom of the Will. The remark made by him at the outset, respecting Hamilton's doctrine upon this subject, may be applied with far more justice to his own system of Necessity, (or of Moral Causation, if he chooses to call it so,) "that it may be regarded as the central idea of

his system — the determining cause of most of his philosophical opinions.” He first finds fault with Hamilton for putting in “a claim for metaphysics, grounded on the Free-Will doctrine, of being the only medium through which our unassisted reason can ascend to the knowledge of a God.” A remark of this sort always bring out all the irritability of Mr. Mill, as he thinks it is an attempt to create a religious prejudice in favor of a metaphysical theory ; and he therefore denounces it, as “not only repugnant to all the rules of philosophizing, but a grave offence against the morality of philosophic inquiry.”

We deny the justice of the imputation, and question the validity of the canon here laid down to restrict the range of argumentation in philosophy. In the passage referred to, far from attempting to excite religious prejudice, Hamilton’s main purpose is to vindicate the importance and dignity of metaphysical science, not only in itself considered, but in the logical connection of its doctrines with the fundamental notions in other sciences, such as morality and religion, of the gravest value and interest to man. Who ever heard that it was blameworthy to commend any science, because the conclusions to which it led the inquirer were favorable to sound morals, and created an additional safeguard for the restraints of conscience? Why, Mr. Mill himself occupies nearly the whole of this long chapter in attempting to prove that his own doctrine of Causation, which denies the Freedom of the Will, is perfectly consistent with “the reality, and the knowledge and feeling, of moral distinctions ;” since these, he affirms, “are independent of any theory respecting the will.” And he afterwards remarks, that “not only the doctrine of Necessity, but Predestination in its coarsest form,” is, in his view, “inconsistent with ascribing any moral attributes whatever to the Deity.” Now, we cannot see that the doctrine thus avowed by himself differs one iota from that which he so severely blames Hamilton for teaching ; except that the latter takes for granted, what indeed is obvious to common-sense, that a Deity without “any moral attributes whatever” is no Deity at all. It would be harsh to say, that Mr. Mill here either denies this common-sense view of the Divine nature, or that he believes all those who hold the doctrine of “Predestination

in its coarsest form " are Atheists. Yet such a construction of his language would be far more natural and justifiable than the imputation which he throws upon Hamilton, of attempting to defend a foregone conclusion by exciting a religious prejudice. In the passage which he misrepresents, though of course unintentionally, Hamilton does not say that metaphysics, or the free-will doctrine, is "the only medium," etc.; but having previously remarked that *mind* itself is "the noblest object of speculation which the created universe presents to the curiosity of man," he continues the argument by asserting, that "*mind* rises to its highest dignity when viewed as the object through which, and through which alone, our unassisted reason can ascend to the knowledge of a God." We may seem to have spent too many words upon this side issue; but in assailing the opinions, and the fairness in argument, of a philosopher who is no longer here to defend himself, Mr. Mill should at least be cautious in making his citations.

We admit that Mr. Mill is justifiable in stating his conviction, that the doctrine of Necessity is inconsistent with the belief that the Deity has any moral attributes whatever, though he thereby violates his own assertion respecting the morality of philosophic inquiry. It is a perfectly legitimate argument against any opinion, to urge that it is at variance with previously established truths in the same, or another, science. Thus, a *psychological* theory respecting perception may be confuted by what is believed to be a *physiological* fact. In like manner, a *metaphysical* dogma may be shaken by proving that it contradicts what are held to be well established conclusions in *theology*. This point is so evident that it is fair to say that it never would have been questioned by Mr. Mill, had he not been so sensitive respecting any allusion to religious belief. It is only another application of the same kind of reasoning to declare, what an invincible law of our nature compels us to believe, that a doctrine which leads to pernicious consequences cannot be sound doctrine. A theory in political science, which, like that of Mandeville, tends to the depravation of society, must be a false theory. So an ethical system, which would make men worse instead of better, must be based on wrong principles, or made out by un-

sound deduction. There is a *reductio ad absurdum* in morals, as well as in mathematics.

Hamilton's theory of the conflicting doctrines of Necessity and Free Will is one application of his Philosophy of the Conditioned, — that both doctrines are inconceivable, but as they are contradictories, one of them must be true; and therefore, as the inconceivability, which is common to both, does not disprove either, we must believe in Free Will, which has, what the other has not, the distinct testimony of consciousness in its favor. Mr. Mill opens his own discussion of the question with his usual astuteness, by quoting with strong approbation his opponent's argument to prove the inconceivability of Free Will, and contemptuously denying or disputing what is urged to establish the other horn of the dilemma, the equal inconceivability of the doctrine of Necessity. This is a fine illustration of the use which a dextrous disputant may make of an adversary's labors; as he thereby gets the advantage of many strong arguments from the Hamiltonian point of view, which a regard for consistency with other portions of his own opinions would not allow him to urge in his own person; and he also has, all along, the air of proving his point out of his antagonist's own mouth.

When it is urged that the Fatalist "overlooks the equal, but less obtrusive, inconceivability of an *infinite* non-commencement, on the assertion of which non-commencement his own doctrine of Necessity must ultimately rest," Mr. Mill tartly replies, "It rests on no such thing, if he believes in a First Cause, *which a Necessitarian may.*" Is he serious in making this extraordinary admission, whereby he abandons the whole preceding argument? A First Cause is an uncaused volition; and if the possibility of *this* is admitted, there is no longer any ground for controversy, and the Free Will doctrine is established.

"What is more," continues Mr. Mill, "even if he does not believe in a First Cause, he makes no assertion of non-commencement; *he only declines to make an assertion of commencement.*" What a hard-pushed disputant, who is willing to shut his eyes to the logical consequences of his own assertions, may do or "decline" to do, is a point not worth con-

sidering. But nothing can be more certain, than that the doctrine of an "absolute commencement," and that of an "infinite non-commencement," can be shown, on the Necessitarian's own hypothesis, to be two contradictories; so that, if there is any truth in logic, the disputant is not at liberty to deny one, and "decline to make an assertion" of the other; for one of them **MUST** be true. According to Mr. Mill's own doctrine of "Moral Causation," every phenomenon is both a Cause of its Invariable Consequent, and an Effect of its Invariable Antecedent; and *this* Antecedent, again, is an Effect of *its* Antecedent, and so on forever. This series of Antecedents must be *infinite*; for if we stop at any one Antecedent, whether near or remote, that one is an absolute commencement, or First Cause, and we are impaled on the other horn of the dilemma. Mr. Mill may take his stand with Hegel, and dispute the validity of the law of Excluded Middle; but otherwise, he is not logically entitled to deny the one contradictory, and yet "decline to make an assertion" of the other.

We affirm, with Hamilton, that we are held to this alternative, an uncaused commencement or an infinite regress, in all cases of Causation whatsoever. But Mr. Mill alleges that, in the case of all other facts except volitions, we accept the supposition of "a regress, not indeed to infinity, but either generally into the region of the Unknowable, or back to a Universal Cause;" and as we are concerned with such a Cause only in relation to its Consequents, and not in relation to its Antecedents, "*we can afford to consider this reference as ultimate.*"

A Kentuckian would certainly call this doctrine a "coming out through a very small hole." The question is not what "we can afford" to do, but what, as philosophers, we are logically bound to do, in order to satisfy all the requisites of the theory which we adopt, according to the most comprehensive view that can be taken of those requisites. It is true that the student of mere physical science, who is concerned only with *proximate* causes, is entitled to stop when he has reached this nearest goal, not because it is impossible, or even undesirable, to go farther, but because it is not the function of this particular physical science, of which he is an adept, to

trace the links of connection with what lies beyond. Thus, having succeeded in tracing a given phenomenon to the law of gravitation, or to that of chemical affinity, he stops there, because these laws, to the special sciences of mechanics and chemistry, are ultimate. Not so with the metaphysician or philosopher, who, under penalty of being pronounced incompetent and degraded from office, is bound to follow his theory, up or down, to "first principles," or the remotest conceivable antecedents and consequents; for his is emphatically the science of "first principles." Having begun with the assertion that this round world needs support of one sort or another, and then having shown that it rests on an elephant, and that the elephant stands on a tortoise, he is not entitled, when asked, "But what does the tortoise stand on?" to answer, "We can afford to consider this basis of support as ultimate." In tracing the chain of Causation, he who stops at any point short of infinity necessarily admits a First Cause at this point, and therefore might just as well have admitted such a Cause at the outset.

Bringing down the discussion to the range of facts, Mr. Mill denies that I am directly conscious of the freedom of my will, on the ground that "what I am *able* to do, is not a subject of consciousness," but only what I actually do or feel; "consciousness," he insists, "is not prophetic; we are conscious of what is, not of what will or can be."

But in this argument he assumes the whole ground at issue; blinded by his own theory, that Causes can be known only through or from their Effects, he *assumes* that Ability or Power can only be inferred from the results of its coming into action, and therefore cannot become known in itself, previous to the occurrence of these results, and independently of them. We deny his whole theory; we deny that consciousness needs to be "prophetic," in order to assure us of what we *can* do. Power, as well as its opposite, inability or a want of power, is a *present* phenomenon, and thus is within the purview of consciousness. Mr. Mill, as we have seen, twice appeals to the consciousness of voluntary "mental effort;" and what possible definition can be given of *effort*, except as *power in exercise*? Still further; consciousness

would not need to be prophetic, even if it were only from its Effects that we could know the causative power of the Will ; for the necessary simultaneity, on which we have just commented, of an Effect with its Cause, enables us to be conscious, at one and the same moment, both of the Effort and of its success or failure. " Ability and force are not real entities," argues Mr. Mill. Certainly not ; they are faculties of the mind, and we are directly conscious of them when in exercise, just as we are conscious of fixing the attention, or controlling emotion, by a strenuous effort. Even in the case of the muscular strain, the failure of the endeavor is far from negating the consciousness of that endeavor. On the contrary, a strong man is perhaps never so fully aware of the extent of his powers, as when he has attempted to accomplish some remarkable feat, and failed ; success comes *before*, but failure only *after*, he has put forth his whole strength. To maintain that we are not conscious of any exertion, and do not even know what exertion is, until the results inform us of its success or failure, is to contradict the plainest testimony of ordinary consciousness, and to utter what must appear a startling paradox even to the vulgar.

Observe, however, that what we thus strongly assert is the ability to *will*, not the ability to *do*, or accomplish the meditated feat ; the latter, we admit, so far as it is an external phenomenon, an actual contraction of the muscles, can be known only through its results. But in one sense, and that a very important one, the volition *is* the action or the doing, in its subjective and moral aspect, since it is for this alone that conscience holds us responsible. A mere volition to commit murder *is* murder, before God, though not at man's tribunal ; since *we* can know the volitions of our fellow-man only by their results, his outward acts.

Mr. Mill denies " that we are conscious of being able to act in opposition to the strongest present desire or aversion." But in proof that we are so conscious, one of his critics cites the fact, that we are as sensibly *exhausted* by a long continued effort to resist temptation, as after any physical exertion ; whereas, if the will passively followed the strongest desire, there would be no occasion for *any* effort, but the volition would be determined readily, and at once, just as the balance turns

under a preponderant weight in either scale. Mr. Mill replies, "The fact is not quite thus, even in inanimate nature ; the hurricane does not level the house, or blow down the tree, without resistance ; even the balance trembles and the scales oscillate for a short time, when the difference of the weights is not considerable." We accept the parallel. The house or tree does not yield to the wind "without resistance," because *it* has innate strength in itself to withstand such force operating upon it from without. Grant as much of the Will, and the case is decided in favor of its freedom. An innate power to "resist" the strongest present desire must be, by the nature of the case, a power *self-determined* to activity, since all other desires then present to the mind are, by hypothesis, weaker than the one resisted. Such self-determination is further indicated by the fact, that resistance to the strongest desire is offered at one time, even to exhaustion, but entirely withheld at another. Not so with the tree or house, the impediment here being mere stiffness or *passive* resistance, and therefore always manifested to the same extent.

We have no space left for following Mr. Mill through the weakest, though the most elaborately argued, portion of his book, in which he seeks to reconcile a denial of the Freedom of the Will with the consciousness of moral responsibility, and with the acknowledgment of the justice of punishment for wrong-doing. Here we must leave him to his other critics and to the common sense of mankind, to which we may boldly appeal, for the instantaneous rejection of a doctrine so repugnant to our most deeply rooted feelings and convictions, that sophistry is only wasted in its defence. Such sophistry is abundantly confuted by the two brief and simple questions put by Mr. Alexander, in his late work: "If Physical Causation incapacitates the Will (and therefore makes the man unpunishable)," and Mr. Mill acknowledges that it does, "must not moral Causation incapacitate it? And if not, what is the rational ground of the distinction?" Being under physical constraint, the man could not have *acted* otherwise ; following his moral antecedents, he could not even have *willed* to act otherwise. Will you dismiss him as innocent in the former case, and punish him as guilty in the latter? He who can answer this question in the affirmative, is prepared to adopt Mr. Mill's theory of Ethics.

THE HUMAN AND THE BRUTE MIND.

FROM THE PRINCETON REVIEW FOR MAY, 1880.

THE question whether the human intellect differs from the brute mind in degree only, or also in essence and kind, is not new in the history of philosophy. It has been debated with earnestness in every age, at least since the revival of letters. In the sixteenth century, Montaigne, who is followed by Charron and Gassendi, undertakes to prove that there is a wider interval of mental power between one man and another than between man and the most sagacious brute. In his usual fleeing and sceptical manner, he says, we must push man back into the crowd of animals from which, in the arrogance of his heart, he aspires to separate himself. In fact, so far as the animal acts from instinct, Montaigne declares, it is the superior; since it then accomplishes at once, and without reflection or effort, tasks which man can perform only imperfectly and after repeated failures.

In the next century, Descartes went just as far into the opposite extreme, when he maintained that brutes are mere automata, destitute not only of intellect and feeling, but even of life. If the animal goes in pursuit of any object, he says, it is because an impression has been made upon its organs of sense, through which a spring is put in motion, that propels the beast in chase just as mechanically as the hands of a watch travel round its face after it has been wound up. Its inarticulate cries, which we wrongly interpret as signs of emotion, are, like the striking of a clock at determinate intervals, caused and regulated by its internal machinery. This is the noted hypothesis of the "animal-machines," which was discussed with so much spirit, both in prose and verse, especially in France, long after the death of its author. Fontenelle, though a Car-

tesian in other respects, took sides on this question against his master, while Pascal, Malebranche, and the Port Royalists defended the doctrine of automatism. Voltaire, in his usual mischievous spirit, entered into the dispute, and enjoyed the fun of arguing that man is no better than a brute.

In our own day, the disciples of Herbert Spencer, and the Evolutionists generally, take sides of course with Montaigne, and against Descartes. As they hold that all modes of being and forms of life, from the lowest to the highest, are successively self-developed, through countless slight gradations, from the primitive atoms which are the formless elements of chaos, they necessarily believe that all the faculties of the human mind exist also, though in a rudimentary state, in the mental constitution of the inferior animals, and may even be traced in imagination much farther back, to the mud or dust whence those brutes originated. In his "Descent of Man," accordingly, Mr. Darwin assures us that "the difference in mind between man and the higher animals, great as it is, is *certainly* one of degree, and not of kind." In the affection of the dog for his master, for instance, he beholds the rudiments of the religious sentiment; in the social instincts he finds the elements of morality; and in the inarticulate cries, "aided by gestures and movements of the muscles of the face," by which animals express their emotions, he detects the origin of language. And Mr. Huxley, consistent fatalist as he is, contrives to unite the doctrine of Descartes with that of Montaigne, by maintaining that man also, like the dog, is an automaton only seemingly animate, and therefore does not essentially differ from the machine-brute; since the higher grade of evolution that he has reached sufficiently accounts for what appears to be the greater skill expended upon his construction.

Not much light is thrown upon the discussion of this subject by the marvellous stories, of which so many are current, of the signal forethought, prudence, and contrivance shown by particular animals on special occasions. Few of these anecdotes are so well authenticated as to deserve full credit; and they would not be reported but for their exceptional character. But only the *habitual* actions of the animal fully evince its real nature and capacities; feats which it may be trained to accomplish,

and acts done under an unusual combination of circumstances, and seldom or never repeated, cannot be safely interpreted as proofs of intelligence. Most of them can be readily explained away, since we can hardly suppose that a brute is any wiser at one time than at another, or that one can be much distinguished for sagacity above his fellows. It is all a matter of interpretation and rather uncertain inference, since we know the animal, so to speak, only from the outside. We can only guess at the state of mind which impelled it to perform a certain act, and we anthropomorphize too much when we attribute it to the same motive and prevision which would induce us to do likewise. The same cry or gesture may spring from very different emotions under different circumstances, when the power of expression is very limited in its range. Thus, the barking of a dog may be either a cry of alarm, a note of defiance, an outbreak of weariness, or an invitation to joyous frolic. In all these cases, the dog is merely giving voice indiscriminately to any strong emotion. The howling of the same animal is certainly a mournful sound, but it is not necessarily sadness or grief that makes it howl. The essence of language is the purpose or intention to communicate definite thought or emotion to others, and not the mere fact that the feeling is thus imparted, though perhaps unintentionally. Through its inarticulate cries and gestures, the emotions of one animal may be made known to its fellows, and may thus actually spread an alarm among them, though certainly not *intended* as a signal of danger, since the same cries are often repeated when the animal is alone, and there are none who can profit by the warning. If the imprisoned starling, that so much excited the sickly sensibility of Laurence Sterne by its pitiful cry, "I can't get out," had been set at liberty by him, it would still have repeated the words as frequently as ever, and with quite as much perception of their actual meaning.

Let us attempt to clear the way for the consideration of this difficult question by first enumerating the several powers and capacities which the lower animals unquestionably possess in common with man. We shall thus find ample grounds for our involuntary sympathy with many of them, and shall obtain a clearer understanding of the remaining points, wherein their

marked deficiencies consist. In the first place, there is no outward act whatever, considered simply as an exercise of nerves and muscles, which brutes cannot perform about as well as man, or even better. They leap, run, climb, and swim; they construct their homes, continue their species, and provide for their young; they weep,¹ howl, and even articulate. Judging from the indications afforded by these outward acts, we have good reason to conclude that the senses of the lower animals, especially those of vision, hearing, and smell, are in many cases more acute and far-reaching than ours. It is equally evident that they have most of the emotions and passions, the desires and appetites, which incite and govern human conduct. They love, fear, and hate; they are angry, emulous, and revengeful. They are capable of magnanimity, and often clearly indicate curiosity, admiration, and *ennui*. Most of them are gregarious in their habits; they seek the company of their fellows, aid each other, are fond of sport, and distinguish their proper food. Their parental affections are very strong, leading almost to any amount of self-sacrifice, so long as their young need care and protection; but when this period of dependence is outgrown, they seem no longer even to recognize their offspring. They are also much under the influence of habit, and the imitative propensity appears clearly in many of them, the possibility of domesticating them, and training them to the service of man, depending largely upon the development of these two traits.

Passing to the more intellectual part of their nature, it is obvious that many of the brutes have a vivid imagination, and most of them have great facility in recognizing scenes and individuals of which they have had experience. A dog asleep upon the rug before the fire shows, by growls and barks, distinctly enough, that he is stemming again in fantasy all the currents of a heady fight. Horses, dogs, and cats retrace with great precision a long road which they have but once travelled

¹ At least, Shakespeare declares that they do, and I hold that he is high authority in natural history. He says of the poor wounded stag, that

"the big round tears
Coursed one another down his innocent nose
In piteous chase,"

as he stood on the verge of the brook, "augmenting it with tears."

over, and never fail to stop at the gate or door which leads to their own home. The doctor's horse knows where most of the patients live as well as the doctor himself. I do not here allude to any of the cases of supposed sagacity, foresight, and contrivance which are clearly attributable to instinct, an anomalous faculty with which all the lower animals are specially endowed; these are no indications of intellect properly so called, but are rather proofs of the absence of it, or of some serious defects of the mental constitution, which needs to be supplemented by the action of so wonderful a substitute as this for reason in the strict sense of the term. Such cases will be considered hereafter under their appropriate head as manifestations of instinct.

Animals are also capable of mental association, though they certainly do not associate *ideas*, for, as will be shown hereafter, they have no ideas. They have only the immediate presentation through the senses of particular sights, sounds, odors, etc., together with the power of reviving these in imagination, of recognizing them as sensations formerly experienced, and of associating with them the emotions and passions with which they were originally accompanied. This is the simplest kind of association; it can all be resolved into an effect of habit, and is therefore closely akin to the animal's power of retracing the road which it has once travelled. The brute associates strongly the passion or emotion once aroused with the implement, the person, or the act by which it was first excited. It may even happen, as the animal is more excitable at one time than another, that the mere sight of the implement, or a menace of the repetition of the offensive act, will produce a greater burst of fury than resulted from the original infliction of pain. A dog will bear patiently a good deal of teasing, and a horse will submit to frequent touches with the whip, though by quickening their pace and trying to get out of the way, they show clearly enough that the act caused pain and resentment. But then comes a time when the brute is unusually sensitive, and some trivial annoyance, or a mere flourish of the whip, will excite a dangerous burst of passion. An invariably attendant sight or sound, harmless in itself, is also associated with the offensive act as its sign or symbol; and then

the familiar cluck, chirrup, or whistle, will produce the required act or emotion as surely as if accompanied with a blow. These facts not only explain the theory and method of training domestic animals, but explain away many supposed cases of sagacity, of acting on a premeditated plan, and of nursing suppressed resentment till a fit opportunity arrives for its full manifestation. Many such stories are told of the elephant, which one who has had large opportunities for observation has recently declared to be a remarkably stupid animal.

What has thus far been admitted undoubtedly tends, as far as it goes, to place the human and the brute mind on a par with each other. Is there, then, any strongly marked and unquestionable defect in the latter, which, when taken together with all its causes and consequences, places an impassable gulf between the two? Undoubtedly there is. The brute is utterly incapable of using language; it certainly cannot talk. This incapacity does not come from any defect in its physical organization, since parrots and several other birds may be taught to articulate words with great distinctness, and many of the mammalia can utter cries and make gestures which might by convention become as intelligible as the finger alphabet of the human deaf and dumb. Then their inability to talk must arise from the peculiarities of their mental constitution; and an analysis of the intellectual processes which are involved in the intelligent use of language will show clearly what are the inherent defects in the brute mind. There was as much argument as wit in the remark of a German naturalist, who said, "I will believe that animals have reason when one of them shall tell me so." Good old John Locke has been much ridiculed for merely citing a story, which he does not profess to believe, about a parrot owned by Prince Maurice, in Brazil, which was able to keep up an intelligent conversation with its visitors. Any attempt to teach animals to use language meaningfully would deservedly excite equal ridicule, since their utter incapacity in this respect is obvious, even to the vulgar. Laura Bridgeman, blind, deaf, and dumb from infancy, and thus apparently less fitted for communication with the external world than any of the vertebrate brutes, was yet mentally endowed with an innate capacity for the use of language, which has been

so far developed by skilful instruction, that she now keeps a diary and writes letters with as large a use of significant phraseology as most educated persons possess. There never was a better illustration than her case presents of the etymological meaning of the word "education," — that it signifies *bringing out* of the mind its native capacities, and not merely *putting into* it any amount of useful information. But no Dr. Howe has ever been foolish enough to attempt to teach a parrot or a monkey to converse, to write a significant sentence, or to read what is thus written. Balaam's ass did not rebuke its master except by a miracle.

What must be the nature of that inherent mental defect which produces this absolute incapacity for the use of intelligible speech? The answer to this question is not doubtful or far to seek. Every significant word in any language is the name or symbol of "a concept," — that is, of what we English formerly called "an abstract general idea." As John Locke remarked long ago, brutes cannot generalize, and therefore they have no ideas to express, and cannot attach any meaning to words as uttered by others. As Bischoff wittily puts it, "the plain reason why animals cannot talk is that they have nothing to say." They can be taught the symbolism of a few proper names; but proper names are not *words*, for they do not connote any meaning, and are therefore not susceptible of definition. Like a colored string hung round the neck, or a chalk mark on the back, they *denote* the particular and individual act, man, or other object that is intended, but do not *per se* connote any idea. If I previously know what message is to be imparted, the proper name or the wave of a handkerchief may point out to me the person to whom it is to be given. But such a name has no more significance in itself than the wave of the handkerchief. Every word, properly so called, is the name, not of an individual, but of a class, and it is applicable indifferently to all the members of the class, because it signifies (connotes) those qualities, and only those qualities, which are common to the whole class. Hence, comparison and discernment are needed in order to know what individuals belong to the class; abstraction is required so as to confine our attention to their common qualities; and generalization is the

mental power whereby we recognize the commonness of those attributes, and the universality of the word within the limits of that class. Each of the mental acts here enumerated is an exercise of judgment; and the expression of judgments is the function of language. Hence, the proper unit or fundamental element of significant speech is, not the word, but the proposition. A single word, "man," does not express any cognition, or impart any fact or incident, except so far as it is explicated and made clear to thought by one or more of the judgments out of which it was first constituted, such as "man is mortal," "man is rational," etc. Consequently, brutes cannot grasp the meaning of a word, because they are mentally incapable of forming a judgment, *i. e.*, of thinking a sentence wherein a predicate is significantly affirmed of a subject. If one of them hears a word of command, it is to him only a symbol, like a whistle or wave of the hand, with which is associated a certain emotion; and through the unconscious force of habit, the emotion thus excited leads him to perform the act which his master intended. It is of no use to utter a sentence or state a proposition to him, for he cannot understand it, and it will have no more effect upon him than a single word, a catcall, or a gesture. The phrase, "the human understanding," is a pleonasm, since every understanding is human or divine. The brute has no understanding, because it is incapable of thought strictly so called; that is, of comparison, discernment, and classification. Through the force of habit and of associating emotions, as of pain and pleasure, with their signs, the animal is capable of being trained; but it is not susceptible of education. Nothing can be brought out of its mind, because nothing preëxists in it, which partakes of the nature of thought. Then the gulf between the brute and the human mind can never be bridged over; the two things being radically unlike, one might as well attempt to develop a football into a syllogism.

Because they have no thoughts of their own, and are incapable of interpreting the thoughts of others, the lower animals, as Schopenhauer remarks, live entirely in the present. They have no proper past or future. Their mental horizon is strictly limited to the objects and events which now affect their senses. It is true that they may imagine sensations which do not actu-

ally exist ; but they cannot distinguish them, as imagined, from those which are real. The past may be presented in imagination, but it is not recognized as past ; that is, it is not consciously assigned to a definite previous experience. It is merely a fictitious enlargement of the scene that is actually before the eyes. Because incapable of comparison and discernment in thought, the animal cannot distinguish the fictitious from the real, or what is, from what was, present to sense. Hence, it probably does not apprehend either time or number, since these are not direct presentations of sense, but can only be cognized in thought. Indeed, time and number are mutually dependent ; neither can be recognized without the other. Time can be thought only as a succession, a larger or smaller number, of moments ; and number can be apprehended only by telling off successive units through a longer or shorter interval of time. Many familiar facts seem to indicate that the brutes have no sense of number. One puppy after another may be secretly abstracted from a numerous litter, and the mother shows no uneasiness or sense of loss ; but she whines piteously after the last one is taken. The hen acts in a similar manner with a numerous brood of chickens. Hence, because incapable of numeration, the brute cannot distinguish between a longer and a shorter interval of time ; that is, it has no apprehension of time as such. More briefly still, to distinguish the present from the past would require an act of comparison, which the animal has no power to perform. Being without a conscious past, the brute is also without a future, since even to human foresight the future is only the shadow which the past throws in advance. The present moment, with its special sensations and emotions, its pleasures and its pains, either coming singly or associated by habit, forms the whole conscious life of the cat and the dog. They have no apprehension of the future, and therefore no dread of death.

“ The lamb thy riot dooms to bleed to-day,
Had he thy reason, would he skip and play ?
Pleased to the last he crops the flowery food,
And licks the hand just raised to shed his blood.”

A very instructive analogy is pointed out by Leibnitz, in expounding his system of the development of all living things,

when he says that the inorganic world is an aggregate of undeveloped or *sleeping* monads, an animal is a *dreaming* monad, and man is a monad that has been *waked up*. The whole mental life of a brute bears a close resemblance to the long-continued dream of a human being. In visions of the night, the friend, whom we lost long ago comes again before us, talks and acts with us in the old familiar way, and we recognize him as our friend and are not at all astonished at his living presence, because we have not the slightest recollection of the fact that he died some ten years ago. At another time, some scene or incident of our early youth is again presented to us just as vividly as when we first witnessed it, and we are a boy once more, the many intervening years of manhood being totally forgotten. Crabbe has marked with his usual force and distinctness this loss of the consciousness of time in our dreams :

“ There was I fixed, I know not how,
 Condemned for untold years to stay ;
 Yet years were not, — one dreadful *now*
 Endured no change of night or day.
 The same mild evening’s sleeping ray
 Shone softly solemn and serene,
 And all that time I gazed away,
 The setting sun’s sad rays were seen.”

Other objects and events flit before the mind’s eye in a confused succession, incoherent, having no bond of union as causes and effects, or in any way influencing each other, and we do not wonder in the least at the strange manner in which they are jumbled together. The understanding is asleep, the senses are closed, but the imagination or picture-forming faculty is more vivid and active than ever, because the restraint in which it is usually held by the faculties of perception and reflection is now wholly taken away. We take no note of time. The agony of some fancied event, such as falling from a considerable height, which ought to occupy only a few seconds, is indefinitely protracted, and we are not at all surprised that it lasts so long. But then, again, incidents in our life’s history, which would fill out months and years, such as a voyage to the antipodes or a period of trial and imprisonment, are compressed into a few minutes, and we do not wonder at their brevity. What is very strange, the conscience or moral fac-

ulty seems to be paralyzed during sleep. Very good men dream of committing frightful crimes without the least compunction, and in fact, without consciousness that they are anything more than innocent recreations. Here too is a remarkable analogy with the brute mind, which is not immoral simply because it is *unmoral*, — that is, without any sense of the difference between right and wrong.

We can now see how it is that the lower animals are unable to profit by their past experience, and therefore, either as individuals or as a race, they are incapable of any mental improvement. Experience is simply a record, whether preserved in memory or in writing, of former observations and experiments. It is a history of the past, in which we distinguish one class of events, as followed by certain consequences, from another class that were not so followed. Evidently this is an operation of memory, and of comparison and discernment, and therefore it is a function of thought strictly so called. We separate the instances of success from those of failure, noticing in each case the invariable antecedent or concomitant circumstances. Then, by the light of an *a priori* principle which no experience can justify, we assume that the future will resemble the past; or, in other words, that the course of nature will be uniform in the future, as it has been in the past. I say, no experience can justify this assumption, for it relates to the future, while experience is concerned solely with the past. Experience can only say that the course of nature *has been* uniform; but it is surely incompetent to declare what the course of nature *will be*. The future is always a lottery. I may have drawn a blank thousands of times; but at the very next drawing, my number may come up a prize. Till within a recent period, innumerable observations went to show that the body of a quadrupedal mammal is never terminated by a bill like that of a duck; but about a century ago, such an animal was discovered in the ornithorhynchus of New Holland. An exception to the law, now deemed to be universal, that every ruminating animal divides the hoof, may be found to-morrow. In truth, so far as the organic world is concerned, besides saying that the course of nature, in many respects, is tolerably uniform, we ought to add that nature never exactly

repeats itself; for, as Leibnitz long ago remarked, no two whelps of the same litter, and no two leaves on the same bush, are ever precisely alike. A brute cannot be made wiser by any amount of experience, because it cannot compare and distinguish, and is therefore incapable of apprehending any general truth, such as that which concerns the course of nature. It is always a slave of habit, whether the oft-repeated act is beneficial or injurious. It may be corrected by discipline, it is true; but only because a feeling of pain or pleasure is thereby artificially and blindly associated with an action otherwise meaningless.

Every one's observation of familiar facts will supply instances enough to prove this stationary character of the brute mind, which arises from its inability to profit by experience. The moth flies again into the flame which had repeatedly singed its wings within a few minutes. A bee or wasp, attempting to escape from a room which it had accidentally entered, will knock its head fruitlessly for a long time against the same pane of glass, though it might find free egress a few inches lower down. The typical form of nest, cell, or web, and the same routine of conduct, are blindly and persistently repeated, though a change of circumstances has made them inadequate or useless for the end in view, and though a slight and easy modification of them would render them again useful and agreeable. The act and the structure which were needed, and even indispensable, while the animal was in its wild state, are renewed in its domesticated condition, though they have then become meaningless and even injurious. The tamed squirrel, which has received more food than it craves for the moment, will scratch at the bottom of its wire cage, and place a nut there, though it should have learned from experience that it is no longer necessary to hide a store of food for future exigencies. In like manner, a half-domesticated beaver, which had the run of the house, attempted to build a dam with any materials that came in its way, though there was no water near, and neither shelter nor concealment were now required. The lesson which nature originally taught the animal was so thoroughly learned that it is repeated by rote, come what may, evidently without any perception of its real meaning, or

any ability to supplement it by the teachings of experience. Hence it is, that the peculiar home which every species of insect and bird constructs for itself is built on the same pattern through an indefinite lapse of centuries, no improvements being copied from its neighbors, and none suggested by a forced change in its locality and modes of life.

This essential defect of the brute mind enables us to appreciate the breadth of the gulf which separates it from the human intellect, when we consider that man depends entirely upon experience for the preservation of his life, the fulfilment of his purposes, and the daily and even hourly regulation of his conduct. It is only by actual trial, and through many efforts, failures, and errors, that we learn the rules of prudence, and how to find our way through the labyrinth of this world's affairs. It is only by experience that we are enabled to keep out of fire and water, to distinguish our food from our poison, to separate our friends from our enemies, and either to help others or to save ourselves. On this single foundation, indeed, is built up the whole fabric of human knowledge; for although primitive convictions and truths spiritually discerned enter into the structure, and in some measure regulate its growth and determine its character, these *a priori* elements become pertinent and available for the guidance of conduct only so far as actual occurrences furnish occasions on which we may reduce them to practice. They supply, to adopt Kant's phraseology, only *the forms* of cognition; and these are comparatively abstract and void, till our life's history furnishes *the matter* to which they are applicable. Conscience, for example, bids me observe certain principles of action, but leaves me to learn from observation how best to act upon them, and what are the tests of their due observance, either by myself or others.

But each man's personal and individual experience is far too narrow and limited, especially in the earlier periods of life, to furnish adequate guidance for all exigencies that may arise, or a sufficient foundation for all the knowledge that he craves. It needs to be largely supplemented by other men's experience, whether these are our contemporaries or the members of former generations. Hence the peculiarly human endowment of lan-

guage as the indispensable means for the advancement of knowledge and the improvement of life through the cumulation of the experience of the race. The lower animals have no need of communicating with each other, because they have no useful lessons to teach; as no one of them can put to any use the little store of his own experience, he would gain nothing by increasing this store through what might be added to it by his fellows. They cannot accumulate or transmit knowledge, because they are originally incapable of profiting by their own experience, and therefore have nothing to impart to others. As already remarked, they do not talk because they have nothing to say.

We can now see a reason for the wonderful fact to which I have already adverted, that, at least in the organic living world, nature takes good care never to exactly repeat herself. She never, even by accident, makes any one living thing undistinguishably like another. It is not that she is incapable of producing perfect uniformity in her work; for she does produce it in the inorganic world, where uniformity is the rule and any departure from it is the exception. The specific gravity of any elementary substance, the proportions in which such substances are chemically united into compounds, the definite forms into which they crystallize, the modes of action, or affinities, of different re-agents, and many other instances of nature's work in this province, are precisely similar to each other; they do not vary even by a hair's breadth. Far otherwise is it in the world of living organisms, where variety is the rule, and uniformity is the exception; nay, it is not even the exception, for not one such exception — that is, no case of two indiscernables, can be produced. So far as I know, Leibnitz is the only philosopher of modern times who has noticed and duly emphasized this wonderful fact, for the statement of it is one of the three fundamental axioms on which his whole system is founded. He calls this axiom "the sameness of indiscernables," which he interprets in a somewhat paradoxical manner to have just this meaning, that no two things can so resemble each other as to be indiscernable, for if they were, they would no longer be *two* things, but one and the same. The illustration that he employed while discussing the subject in the presence of the Prin-

cess Caroline, as they were walking in a garden together, was that no two leaves precisely alike could be found on any bush. Another gentleman who was present took up the challenge, but after a long search was obliged to confess that the statement of Leibnitz was probably correct. A better illustration, as it seems to me, might be taken from the human face. Here, all the differences are crowded together within narrow compass, say within the limit of six by eight inches, and all the main features — brow, nose, eyes, cheeks, mouth, and chin — are constructed essentially on the same general pattern. But what a marvellous wealth of difference underlies all this uniformity ! Among the many millions of human faces that people this earth no two can be found so nearly alike but that they are easily distinguishable at a glance. Once in a great while, indeed, a case of disputed identity comes before our tribunals of justice ; but if there is no better ground of dispute than there was concerning the Tichborne claimant, though the genuine Sir Roger had not been seen for over thirty years, the jury would very quickly come to a verdict. Those who failed to see that Orton was not Tichborne had marvellously short memories.

How the followers of Tyndall and Huxley are able to reconcile this measureless variety in nature with their theory, that all living things are turned out by machinery on purely mechanical principles, is more than one can easily imagine. They hold even that thought, that wonderful psychical process which generated the poetry of Milton and the science of Newton, is only the necessary mechanical result of the molecular changes of protoplasm. As the stimulus of an electric spark, they say, causes hydrogen and oxygen to unite into an equivalent weight of water, so the stimulus of preëxisting living protoplasm causes carbon, hydrogen, oxygen, and nitrogen to generate an equivalent weight of other living protoplasm. There is no other reason for attributing a new entity, *vitality*, to the protoplasm thus produced, than for ascribing as a new entity, *aquosity*, to water. As it is by its mere chemical and physical structure that water exhibits its aqueous properties, it is also by its mere chemical and physical structure that protoplasm exhibits what are called its vital properties ; for in-

stance, that it generates, *inter alia*, nerve substance or brain, and the brain thus formed generates its infinite wealth of thought. In short, this theory reduces psychology to physiology, physiology to chemistry, and chemistry to the mechanical action of molecules upon each other; in other words, the whole series of intellectual and vital processes is accounted for as the continuous and uniform action of a self-generating machine. But if the brain thus becomes comparable to a large printing-office that is worked by machinery throughout, then I insist that the types must perfectly resemble each other, because struck from the same matrix, and one printed sheet must be indistinguishably like every other which has been impressed on what the printers call the same "form." But the fact is far otherwise. The types set up to furnish imprints of the human face divine never, even by accident, produce two impressions exactly alike. The thoughts printed on two brains at the same time and under the same circumstances, or on the same brain at different times, are diversified and individualized beyond all power of computation. Life and thought, as thus infinitely varied, cannot be the results of machinery.

Now I say that this measureless variety of tint and outline, with which nature individualizes all her living products, is the necessary means of enabling experience to do its appropriate work. Only because every living man and animal is what the Scotch call *kenspeckle* — *i. e.*, easily recognized — can any one of us profit by the lessons of the past as a guide to the future. Thus only are we enabled to select appropriate means for definite purposes and ends. Thus only can we distinguish our friends from our enemies, him whom we may safely trust from him whom we must beware of, our food from our poison, my own child from a stranger to my blood, an explored country from a trackless waste. The whole fabric of civilized society may be said to depend upon the possibility of giving testimony on oath, that this particular man stole this particular horse. In other words, discrimination is necessary, and this, as we have seen, is the essential and distinctive element of human thought.

But the question immediately arises, what substitute does

the brute possess for this peculiar endowment whereby the human mind is made capable of doing its necessary work, and thereby of providing for self-preservation and all the manifold exigencies of its life. Such a substitute there must be. Man is enabled to provide for his wants only because he can profit by his own experience and that of his fellows ; while the brute, as we have seen, is not made one whit the wiser by any amount of experience, because it cannot properly distinguish one case from another, or discern the comparative faults and excellences of two of the same kind. How then can it preserve its life and perform its ordinary work ? The answer to this question brings us at once to the heart of our subject, as it shows that the greatest difference between the human and the brute mind is not one of defect on the part of the latter, but rather of an excellence, since it is the exclusive possession of a faculty which so far transcends the power of human reason, that in its most common manifestations it appears inscrutable, miraculous, and even divine. So far as the lower animals are guided by it, and they are all more or less under its control and dependent upon it, their actions appear to us not as subhuman, but as superhuman. Instinct is inspiration ; even Kant says of it that " it is the voice of God." The only adequate definition of instinct is, that it does all the work of experience without any aid from experience, so that man can only wonder at, but cannot understand, its operations.

It is a curious and instructive fact, that we have no one word in the English language to express what the French call *clairvoyance*, and the Germans *Hellsehen* ; that is, the assumed power of knowing more than experience ever taught, or is even capable of teaching. I say, this is an instructive fact, because it indicates that practical and incredulous turn of the English mind, that large and roundabout common sense, which recoils with aversion from all idle tales of seeing into the future without any aid from the past ; of perceiving by immediate intuition what is obviously beyond the range of the senses ; and generally of accomplishing any feat which transcends our ordinary human faculties. We have not the name, because we do not believe in the thing. The French, and especially the Germans, are more fond of the marvellous, and

more prone to accept it on insufficient evidence. The Scotch give to the power in question the name of "second-sight." The nearest approach that we can make to this meaning in English is our word "seer," or prophet, denoting one who

"can look into the seeds of time,
And say which grain will grow, and which will not."

It is the power attributed by the vulgar to witches, demoniacs, somnambulists, and magnetized persons, but which no educated and well-balanced mind is capable of believing that they actually possess.

Now I affirm that this very marvellous faculty of *Hellsehen* or *clairvoyance*, which no sensible person believes for a moment that any *human* mind has ever manifested, at least for the last eighteen centuries, is unquestionably possessed in high perfection by many, if not most, of the lower animals under the name of Instinct, and even by those who are as low down in the scale as the fishes and the insects. I might take, as a familiar instance, the often cited case of a kind of wasp, which stores up food of a kind which it never uses for itself, for the future sustenance of its young whom it is never to see, because its own life ends before theirs begins. This case is instructive, because such prevision, confessedly beyond the range of the animal's individual experience, seems also to be inexplicable even by the aid of Mr. Herbert Spencer's ingenious supplemental theory of the accumulated effects of transmitted ancestral experience. But as the heroic imaginations of the Evolutionists, which are not to be appalled by many difficulties so long as an opening can be forced through them by any suppositions, however violent, do attempt to explain away such wonders by the combined influence of heredity and natural selection, — as Mr. Darwin does, for instance, in respect to the transmitted instincts of the working, neuter bees, — I will take another case of Instinct, which is undoubtedly independent both of individual and ancestral experience. I refer to the marvellous power, which many animals unquestionably possess, of finding their way home, or to their proper point of migration, unaided by their previous explorations. The stories seem to be well authenticated as to the possession

of this remarkable instinct even by mammals, such as the dog, the cat, and the donkey, which have been carried away by sea for a great distance, and have then found their way home overland, unguided, by a route never before traversed by them or their progenitors.

Migratory birds, including many who were hatched during the very season of their departure, wend their way twice a year through the trackless fields of air to far distant regions with so much precision, that one writer supposes them to possess an instinctive knowledge of the cardinal points of the compass. The carrier pigeon, removed from London to Paris in a basket, so that it cannot observe the surroundings, and whose limited vision certainly cannot see the end of its journey from the beginning, even if the curvature of the earth were not in the way, immediately on being released flies straight and swiftly to its former home. But men living in a sparsely settled country, or in the neighborhood of vast forests, have lost their way and died of exposure and privation, though distant only a few miles from their own doors. Bee-hunters, in our western country, are able to track the ordinary honey bee to its distant hive, because its instinct teaches it to fly home in what is called "a bee-line," that is, in one mathematically straight. Two of them are caught, and then separately released at points a few rods distant from each other, their several lines of flight being accurately noted; where these two lines intersect, generally in a hollow tree at a distance of one or two miles, the hive is found. This precision of flight cannot be explained by the insect's sharpness of vision, or by the elevation at which it flies; for the hive may be in a thick forest, so that the intervening trees hide it, if one is but a rod or two distant in any direction.

It must be still easier, and more hopeless, to lose one's way in the unexplored depths of ocean than even in a vast forest or a trackless desert. Here are no furrows or water-marks, and no possibility of vision beyond an extremely limited distance; all must be a vast expanse of blinding uniformity. Yet migratory fishes, like the salmon and the shad, after wandering through the ocean during the whole winter, return with unerring precision, when the breeding season approaches, to

the very rivers which they left months before. The recent success of pisciculturists in stocking with the ova of these fishes distant streams never before frequented by them supplies more proof, if more were needed, that no store of inherited experience can supply the needed road-marks and guidance. A familiar knowledge of the Tweed and the Shannon will not help the salmon fry to find its way at the antipodes in the rivers of Australia. The human navigator, though aided with compass, sextant, chronometer, chart, nautical almanac, and other instruments and records of systematized experience, directs his voyage with difficulty over the ocean surface, though his vision there extends for leagues in any direction. The salmon, guided only by instinct, and with no aids beyond the organs of its own body, follows its course far below, through the dimly-lighted depth of waters, with even greater security and precision. For it is a characteristic of instinct, that it never hesitates, wavers, or doubts; and it makes no mistakes. Instantly, without stopping to think, for indeed it is incapable of thought, and however protracted and complex its task may be, it does just the right thing at just the right moment.

In fact, every undoubted case of instinct involves the exercise of this mysterious power of *Hellsehen* or "second-sight;" for its nature is, to make laborious provision for exigencies that are still in the comparatively remote future, and of which the animal has had no experience whatever. The bird not yet a year old, how does it know that the cares of maternity are coming upon it, and must be met by the construction of a nest of which each species has its distinctive pattern? Properly speaking, of course, the animal does not see into the future, its vision being strictly limited to what is before it at the present moment. But its actions and endeavors are as wisely regulated as if it had far more than human foresight. Instinctive action is working for a purpose, without any consciousness of that purpose. That purpose is an all-important one, either for the continuance of the animal's own life, or the propagation of its species. The long-continued and laborious work that is done for this purpose is usually distasteful for the moment, involving a considerable sacrifice of the creature's present ease and enjoyment. But urged by an impulse stronger

than death, it lifts the self-imposed burden and bears it stoutly to the end, uncheered even by that which is the great solace of all human labor, the hope of future happiness which is to reward the performance of duty. The action of instinct bears some resemblance to what man does under the influence of habit, his work having become a mere routine which he performs without reflection, and almost without consciousness. But habit is not instinct, for it is slowly generated and perfected by experience; while instinct, perfect from the moment of the animal's birth, is altogether independent of experience.

Instinct is certainly given to the brutes as a substitute both for reason, and for experience which supplies the materials on which human reason operates; and in truth, we know that the two faculties exist in inverse ratio to each other. As at the bottom of the scale, in the lowest animal, there is certainly no trace of reason, so at the top, in man, there is no vestige of instinct. In the human being, it is true, we find natural and primitive emotions and appetites, which are often loosely called "instinctive." But they do not deserve the name, for they dictate only the end to be pursued, but do not guide us, as instinct would, in selecting the right means for its attainment. On the contrary, the stronger the feeling or desire, too frequently are we the more mistaken in our eager attempts to gratify it, which often defeat the very purpose we have in view. Instinct does not commit such blunders. I have already alluded to the fact that the highest and most marvellous instincts are manifested far down in the scale, among ants, spiders, and bees, and are comparatively infrequent among the vertebrates. But even here, birds show more numerous and more complex instincts than mammals, and fishes are guided more by what answers to inspiration than by habit. Hence, as Professor Mivart remarks, "the more instinctive a man's actions are, the less are they rational, and *vice versa*; and this amounts to a demonstration that reason has not, and by no possibility could have been, developed from instinct. "When two faculties tend to increase in inverse ratio, it becomes unquestionable that the difference between them is one of kind." This is the case with respect to sensation and perception. Both Dr.

Reid and Sir William Hamilton have noticed the fact, that as the sensation becomes intense — looking at the full blaze of the sun, for instance, — the cognitive perception of shape, color, and other attributes diminishes; and conversely, as the perception becomes more distinct, the mere sensation fades out into indifference, and no longer gives either pain or pleasure. This is the case in reading a printed page, where the cognitive faculty comes into play almost exclusively, and the mere visual sensations of black figures on a white ground are hardly noticed; we are absorbed by the thought and disregard the symbols. We have here one instance of the opposition between mere feeling, which is a purely subjective state of mind, and the objective cognition of rock, tree, or water. In fact, perception proper is a rational process, which needs the aid of the understanding or thinking faculty, in order to compare, discern, and judge, and cannot be completed without it. The brute merely stares at a novel object, and does not properly take it in, or understand it. He has sensation from it, but no proper perception of it. But man, though perhaps seeing the object for the first time, still in a certain degree recognizes it, or knows it over again, saying, “this is a tree, or a house.” Judgment, a purely intellectual act of which the brute is incapable, is involved in every act of perception strictly so-called.

The instinct which guides the ant and the bee is really the same with the power, or agency, call it what you may, which directs the physiological processes that paint the peacock’s tail with so complex and gorgeous a pattern, and arrays shells and flowers in their decorated holiday garb. Indeed, the process of development, through which the whole organism is built up on a complex but definite plan, with its machinery of limbs, muscles, joints, and nerves, and its adornment of plumage, shell, and scales, is but half of the work necessary to be accomplished before the animal is fitted to play the part assigned to it in nature’s scheme, and thus to preserve its own life and continue its species. Together with the organs and other physical means of doing its work, it must have the knowledge and skill requisite for making the proper use of those means, and directing them towards the appropriate ends to be accomplished.

The instinct and the organism in which it is lodged are necessarily related to each other, as parts of one whole ; any change in either of the two factors would incapacitate the animal for its task, if it were not accompanied by a corresponding change, nicely adapted to it, in the other. Thus, in the spider, the gland which secretes the viscid fluid, which is the raw material for constructing the web, must be correlated with the instinct for drawing out the threads and weaving them into the peculiar pattern of that web ; and both these processes again must be nicely correlated to the general purpose in view, that of entrapping its prey. Webbed feet and plumage impervious to wet must be correlated with the instinct to take the water and swim ; as is clearly seen in the case of ducklings that have been hatched out by a hen, as in this case the instinct cannot have been acquired by instruction, experience, or imitation. Many birds instinctively hide their nests, both by building them in crevices and corners not exposed to open view, and by assimilating them to the color of the surrounding rock or foliage. In like manner, the agency, whatever it may be, which constructs the animal's organism, often provides for its protection through concealment by similar means, as by assimilating the color of its skin or plumage to that of its surroundings, or by mimicry of forms of a different nature, — for instance, by imitating the color and external structure of a dead leaf. Even man has an involuntary and almost unconscious impulse to imitate actions in which he is much interested, as when we cough or yawn by contagion, or writhe and twist our bodies in sympathy with the rope-dancer whom we are gazing at. Reasoning from analogy, then, we may well conclude, that it is an imitative impulse, though a wholly unconscious one, which gradually assimilates the insect's color and external form to a dead leaf, or some other shape seemingly so fantastic that it appears like a purposeless freak of nature. But then we must also admit, that the ordinary process of building up the animal's whole body in the normal way, after the common type of its species, is throughout the animal's own act, though a blind and unconscious one, performed under the guidance of a higher power. It is not the brain which generates the instinct, but it is the instinct which constructs the brain, as well as every other portion of the organism.

MALTHUSIANISM, DARWINISM, AND PESSIMISM.

FROM THE NORTH AMERICAN REVIEW FOR NOVEMBER, 1879.

THE doctrine of the perfectibility of the human race was first systematically taught by a school of philosophical radicals toward the close of the last century. It was a natural outgrowth of the extravagant hopes that were created by the earlier stages of the French Revolution. Condorcet, while he was in hiding in order to escape the fate of the Girondists, showed the firmness of a philosopher by writing his "Sketch of the Progress of the Human Mind," in which he predicted the removal of all social and political evils, and the establishment of peace, virtue, and happiness over the whole earth. He was arrested before the work was completed, and escaped the guillotine only by a self-inflicted death. In England, William Godwin published, in 1793, his "Political Justice," in which he advocated the same doctrines that Condorcet had taught, and almost with equal peril to himself; since the Government and the populace at that period, as Dr. Priestley found to his cost, showed little mercy to those who were accused of holding revolutionary opinions. Godwin attributed nearly all the vices and misery with which society is afflicted to bad government and bad laws. Reform these, he said; do away with the institutions of property and marriage, which are based on monopoly and fraud, establish the equality of all men, and all wars and contentions will cease, and the spirit of benevolence, guided by justice, will distribute equitably the bounteous fruits of the earth among all persons according to their several needs.

In 1798, as an answer to Godwin's "Political Justice," the Rev. T. R. Malthus published his "Essay on the Principle of Population, or a View of its Past and Present Effects on Human Happiness." This work had early and great success; it

formed the basis on which, in great part, during the first half of the present century, the English science of Political Economy was constructed. Of course, it was deeply imbued with pessimist opinions. The author's purpose was to show that the principal evils with which human society is afflicted are ineradicable, having their root in human nature itself, so that they are sure to break out anew, and with increased virulence, after any temporary alleviation. Misery and crime, he argued, are not produced to any considerable extent by laws and institutions of man's device, and certainly are not curable by them. Poverty and want are their chief source, and these are the inevitable results of Over-Population and the consequent Struggle for Existence. A blind and insatiable craving urges man to multiply his kind, and the necessary consequence of gratifying this impulse is, that the increase of the population has a constant tendency to outrun the means of subsistence. At present, some restraint is put upon this increase by prudential considerations; since most persons consider the irremediableness of marriage, and fear to create an obstacle to their success in life by burdening themselves with the support of a family. Let us suppose, then, that this restraint is taken away, by a removal of all the causes which now render it an act of imprudence for either sex to gratify their natural inclinations. Let us suppose that property is equally distributed; that marriage is no longer an indissoluble tie; that wars and contentions have ceased; that unwholesome occupations and habits of life no longer prevail; that medical skill and foresight have stamped out all preventable diseases; that the people no longer congregate in great cities, those nurseries of vice and disease, but are distributed over the face of the country, and are engaged chiefly in healthful agricultural operations; and that the community, as Plato recommended, undertake the whole care and support of all the children that are born, instead of allowing them to become a particular burden to their parents. Is it not evident that, under such circumstances, population would multiply more rapidly than ever, and that there would soon be, not only a lack of food, with a swift return of all the evils consequent upon poverty and famine, but even a want of standing-room for the multitudes claiming place upon the surface of the earth?

“How small, of all that human hearts endure,
That part which kings and laws can cause or cure!”

For the law is common to the vegetable and animal kingdoms, the human race included, that the rate of increase, however slow or rapid it may be, *must* operate in the way of a geometrical ratio. The same causes which double a population of one thousand will double a population of one thousand millions. For example: a given rate of increase, between 1790 and 1800, added only 1,200,000 to the white population of this country; between 1830 and 1840, *the same rate* of increase added 3,600,000. Our population was more than doubled between 1790 and 1820; it was again more than doubled between 1820 and 1850. But the former doubling added less than five millions to our numbers, while the latter one added over ten millions; and the next doubling, in 1880, will have added considerably more than twenty millions. Inevitably then, if the population increase at all, it must increase in the way of a geometrical progression — that is, as the numbers 1, 2, 4, 8, 16, etc.

But the means of subsistence, at best, cannot possibly be made to increase faster than in an arithmetical ratio — that is, as the numbers 1, 2, 3, 4, 5, etc. The surface of the earth affords only a limited extent of ground, and this is of various degrees of fertility, large portions of it being hardly cultivable at all. By putting more ground in cultivation and improving the modes of agriculture, it is conceivable that, within twenty-five years, the quantity of food should be doubled. But it is not conceivable that *more* than this should be accomplished; that is, that the second twenty-five years should make a *larger* addition to the existing stock than was obtained during the former period. Hence, under the most favorable supposition that can be made, beginning with an annual product equal to one million bushels of wheat, at the end of the first quarter of a century this might be raised to two millions, at the end of the second quarter to three millions, and at the close of the third period to four millions.

Of course, the population cannot actually outrun the supply of food, though it is constantly, as it were, striving to do so and battling for the ground. It is restrained, first, by what Malthus calls the *preventive* check, which consists in the exer-

cise of moral restraint, whereby some persons repress their natural inclinations, and either do not marry at all, or postpone the time of marriage till comparatively late in life. This check keeps down the increase of numbers *through diminishing the proportion of births*. Where this fails to operate to a sufficient extent, the second, or *positive*, check *must* come into play, *by increasing the number of deaths*, through insufficient nourishment, overcrowding, disease, and crime. Vainly does private munificence or public liberality seek to remove the proximate causes of these evils. Interference only does harm. Leave the poor alone, then, say the Malthusians, to be chastised by fever, hunger, and misery into a sense of their obligation to society to refrain from increasing their own numbers. The more numerous the family of the pauper, the less claim he has to relief; his own suffering and that of his family must be his punishment, for thus only can his neighbors be taught prudence. Sanitary measures are equally inefficient. Check the ravages of the small-pox by vaccination; then typhus fever, the Asiatic cholera, or a famine must supervene in order to keep down the superfluity of life. Hence McCulloch, a leading economist of this school, talked of "the irretrievable helotism" of the English working classes, and advised his countrymen, in view of it, "to fold their arms and leave the *dénouement* to time and Providence."

The theory of Malthus at once became popular in England, not only because it refuted the revolutionary doctrines of men like Godwin and the French Jacobins, but because it seemed to relieve the rich from any responsibility for the sufferings of the poor, and from any obligation to contribute to their support. "If my conclusions are adopted," said Malthus in his preface, "we shall be compelled to acknowledge, that the poverty and misery which prevail among the lower classes of society are absolutely irremediable." And these conclusions seemed incontrovertible, for they rested upon a basis of mathematical calculation, and were supported by an appeal to the obvious facts, that the poor man is made still poorer by the possession of a large family, and that destitution and suffering are most prevalent in localities where the population is most dense. Consequently, pauperism should be regarded as a crime,

and should be stamped out, like the cattle-disease, by harsh legislative measures. These opinions led to the enactment, in 1834, of the New Poor Law, the avowed purpose of which was to prevent what is called "outdoor relief," and to collect the destitute and starving in Union workhouses, where, as in jails, the separation of the sexes, the lowness of the diet, and the general severity of the regimen should be a terror to the evil-doers who had presumed to burden society with their superfluous progeny. If the crime was not literally theirs, it was at any rate their parents' fault, and the sins of the fathers must be visited upon the children in order to deter others from like offences. "Go to the workhouse, or starve," was henceforth to be the answer to all applicants for parochial relief; and the reader of Dickens need not be reminded that many of them preferred the latter alternative.

It seems strange that Malthusianism should become an accepted doctrine not only with the Tories and the landed gentry, but with the Whig *doctrinaires* generally, the wealthy manufacturers, and especially the Philosophical Radicals of the Benthamite school, whose leaders were the elder and the younger Mill. The "Edinburgh Review" advocated it strenuously. Miss Martineau, of whom, as well as of Jeremy Bentham, it must be confessed that the practice was in strict conformity with the principles, inculcated it in a pathetic love-story, which formed one of her "Illustrations of Political Economy." The Benthamites did not allow any morality of sentiment or delicacy upon this subject to conflict with their principles of thoroughgoing utilitarianism; for it was openly charged against some of their leaders, about 1830, that they caused placards to be posted in the most crowded districts of the great manufacturing towns, in order to teach the laboring poor the same detestable opinions and practices for disseminating which Besant and Bradlaugh have recently been convicted and punished. John S. Mill was so provoked with the people of the United States for multiplying rapidly, that he pointed his censure of our folly with this coarse sneer, directed against the Northern and Middle States: "They have the six points of Chartism, and they have no poverty; and all that these advantages do for them is, that the life of the whole of one sex is de-

voted to dollar-hunting, and of the other to breeding dollar-hunters."

But the triumph of Malthusianism lasted only for about half a century, and its decline and fall have been even more rapid than its rise. The tide turned about the time of the famine in Ireland in 1846-1847, and the consequent fearful exodus from that unhappy island, which, in less than ten years, deprived it of full one fourth of its population. In 1845, the number of persons in that country was estimated at 8,295,000; and they were increasing with considerable rapidity. In 1851, the population was only 6,574,278; and in 1871, it was less than five and one half millions, being a diminution of nearly thirty-five per cent. The Malthusians themselves were appalled at such a result. For the evil did not stop with the immediate diminution of numbers; as usual in such cases, it was chiefly those who were in the flower of life, the healthy and the strong, who emigrated, leaving behind them the aged, the feeble, and the diseased. Hence, the people at home deteriorated in vitality and working power even in a higher ratio than their decrease in numbers. At the same period, there was also a great emigration, though by no means to an equivalent extent, from England, and especially from Scotland, where the great land-owners had acted on Malthusian principles by depopulating their vast estates, unroofing the cottages over their tenants' heads, and thus compelling them to ship themselves beyond sea. Then came the great trials of the Crimean war and the Indian mutiny, with the attendant difficulty of recruiting the army, so that the country awoke to a knowledge of the sad truth that, in banishing their people or preventing their increase, they were drying up the sources of their productive power and their military strength.

These events procured a hearing for the arguments with which Mr. Samuel Laing, the noted traveller and social economist, Mr. W. T. Thornton, the author of "Over-Population and its Remedy," Colonel P. Thompson, and others, had already vigorously assailed the doctrine of Malthus. In the "North American Review" also, (October, 1847, July and October, 1848,) this pessimistic theory of population was impugned on general grounds, and with facts drawn from Ameri-

can experience. At present, a mere glance at the considerations drawn from these various sources, which afford a decisive refutation of Malthusianism, must suffice.

The actual limit to the growth of the population in any country is, not the quantity of food which it alone is capable of producing from its own soil, but the quantity which it is able and willing to purchase from other lands. Practically, then, the only limit for it is the number which the surface of *the whole earth* is capable of feeding. The world is far from being over-peopled yet, and the amount of food which it can produce is so immensely in excess of the present demand, that any deficit in the supply cannot reasonably be anticipated for thousands of years to come. Europe alone is able to feed, from its own resources, a population five times as great as its present number, before it will be as thickly peopled and as fully cultivated as Belgium is now; and the additional supplies which it might obtain, if needed, from our own Mississippi Valley, from South America, South Africa, Australia, California, and Mexico, are so vast that they cannot be computed. Savage tribes do not multiply at all, but rapidly become extinct as soon as they are brought in contact with civilization; and even half-civilized races, like the Turks, Arabs, Tartars, Hindoos, and Chinese, are either stationary or diminishing in number. Turkey in Europe, Asia Minor, Mesopotamia, and Turkistan were probably more populous two thousand years ago than they are now. In every way, therefore, man, not Providence, is in fault. The bounties of nature are practically inexhaustible; but men are too ignorant, indolent, and self-indulgent, too much the slaves of their lower appetites and passions, to profit by them.

At present, therefore, and for an indefinite period still to come, the only limit to the quantity of sustenance which any nation is able to procure, either by cultivating its own soil or by importation from other countries, is the *amount of wealth* which it is capable of producing. Hence, civilized nations, let them multiply as fast as they may, do not direct their energies chiefly to the raising of food, but to the acquisition of wealth. And, for the attainment of this end, any increase of their numbers, far from being an obstacle, is a help; for, if

there are more mouths to be fed, there are more hands to feed them with. An increase of the population is, *pro tanto*, an increase of productive power, and it makes no difference whether the article produced is food, or a commodity immediately exchangeable for food. One pair of hands, if allowed fair play, can more than satisfy the demands of one stomach, so that there will always remain a surplus for the gradual accumulation of wealth. Less than one fifth of the people of England now devote themselves directly to agriculture, because the other four fifths find that, in the various pursuits of manufactures and commerce, they can equally well obtain the means of satisfying their hunger, and gradually become rich by having a larger surplus. The increase of their numbers does not compel them to cultivate inferior soils near home, but enables them to purchase grain and beef raised on the fat prairies of Illinois or the fertile plains of southeastern Europe. London taxes all the counties of England for sustenance; England taxes all the countries of the earth for sustenance. Is there any greater hardship or difficulty in the latter case, than in the former one?

In these modern days, with our improved means of communication by steam and telegraph, extreme poverty is the only possible cause of a famine; and even this poverty is attributable, not to the absolute lack of wealth, but solely to its unequal distribution. It was so in the Irish famine of 1846, 1847, and in the Indian famine two years ago. When the suffering was at its height, ship-loads of corn and meal were turned away from the Irish ports, and of rice from Madras and Calcutta, solely from the want of a market. In either case, also, great wealth was near at hand; but it belonged exclusively to the few, and was accessible by the many only in the hard form of charity. The fate both of the Irish and the Hindoos was the more terrible because they starved in the midst of plenty.

On examining the facts in the case more closely, it will always be found, that it is not the excess of population which causes the misery, but the misery which causes the excess of population. Hopeless poverty makes men imprudent and reckless, and leads them to burden themselves with a family,

because they cannot be worse off, and there is no possibility of improving their condition. In Switzerland, where the land is parcelled out among small proprietors, the peasantry obtain a comfortable livelihood, and therefore increase so slowly that the population will not double itself in less than two hundred and twenty-seven years. In France, where also the land is cut up into very small estates, and the peasantry are vastly better off than in England, the rate of increase for the population for ten years is only five per cent. In England, for the same period, it was fifteen per cent. ; and in Connaught, the sink of Irish misery and degradation, between 1821 and 1831, it was as high as twenty-two per cent. In Galway and Mayo, notoriously two of the most destitute counties, during the same period, there was an increase in the one case of twenty-seven, and in the other of twenty-five, per cent. — nearly as great as in the United States. Thus, the two extremes of general misery and general well-being produce very nearly the same effect on the movement of the population.

In all old countries, which have long since outgrown what may be called the Colonial period, during which, as in Australia and the western portion of the United States, the abundance and cheapness of new land waiting to be taken into cultivation tempt most of the people to engage in agriculture — in all old countries, I say, that is, throughout Europe and the most populous parts of Asia, the true law determining the increase of the population is the very opposite of that which the Malthusians sought to establish. They would have us believe that, in proportion as people are well off and have abundance of food, they multiply all the faster ; while the poorer classes, kept down by the *positive* check — that is, by the privations, famines, and diseases generated by over-population — do not multiply at all. But the facts prove beyond all question, that the increase of any class of the people is in inverse proportion to its wealth and social rank — that is, to the amount of sustenance which it can easily command. Universally the law is, that the numbers of the poor increase most rapidly, of the middle classes more slowly, and of the upper or wealthier ones either not at all, or so slowly as hardly to be perceptible. “By a singular anomaly,” says Alison, a well-

informed English writer upon the subject, "the rapidity of increase is in the inverse ratio of the means which are afforded of maintaining a family in comfort and independence. It is greatest when these means are least, and least when they are the greatest."

Thus, in Sweden, the official returns from the census and the registration of births, deaths, and marriages show, that the rate of increase for the peasantry is nearly six times greater than that of the middle class, and over fourteen times greater than that of the nobles. In England, it is a matter of common observation that the families of the nobility and landed gentry constantly tend to die out, and, if they were not recruited by promotions from the middle classes, the upper orders of society would gradually disappear. Of the barons who sat in the English House of Lords in 1854, the peerage of considerably more than one half does not date back beyond 1800; and not more than thirty of them can boast that their ancestors were ennobled before 1711. The continued and increasing opulence of the landed gentry of England is chiefly attributable to this cause; since the diminution of their numbers tends, of course, to the concentration of their estates. Celibate or childless lives are common among the younger sons of the nobility and gentry, while they are very infrequent in the classes of artisans and laborers. Even here, in the eastern part of the United States, the sons in educated and wealthy families marry later in life, and have fewer children, than those in the classes who live by handiwork; while the Irish laborers are the most prolific of all. No farther back than the beginning of this century, families containing from ten to fifteen children each were not infrequent here in New England; now, one that has more than six is seldom found, except among the very poor.

Since 1850, therefore, English writers upon political economy have generally ceased to advocate Malthusianism and its subsidiary doctrines. Many, like Doubleday and Macdonell, besides those already mentioned, renounce it altogether; others pass over it in silence, or, like Fawcett, lend it only a half-hearted support. Even J. S. Mill, who inculcated it like a fanatic in his great work published in 1847, seems to have changed his opinions entirely before his death. In his discus-

sions with Mr. Thornton, he gave up "the wage-fund" doctrine, one of the principal corollaries from Malthusianism; and in his posthumous papers upon Socialism, published in the "Fortnightly Review" in 1879, he expressly teaches that misery causes an increase of the population, instead of the converse proposition, that over-population produces the misery, which is the essence of the Malthusian theory.

Singularly enough, in 1860, at the very time when this gloomy doctrine of "a battle for life" had nearly died out in Political Economy, most of the authorities upon the subject having quietly abandoned it as an indefensible speculation, it was revived in Biology, and made the basis in that science of a theory still more comprehensive and appalling than that which had been founded upon it by Malthus. Among the countless forms of vegetable and animal life which are developed through the hereditability of casual variations from the ancestral type, "a struggle for existence" is constantly going on; and it is a necessary consequence of this struggle that the fittest forms — that is, those whose organs are best adapted to their surroundings — should survive, and that the others, the comparatively unfit, should perish. "The struggle for existence among all organic beings throughout the world," says Mr. Darwin, "inevitably follows from their high geometrical powers of increase;" and he adds, "This is the doctrine of Malthus applied to the whole animal and vegetable kingdoms." Hence, every improvement, however slight, in the adaptation of any species to its environment tends inevitably and mechanically, as it were, to make that species a victor in the battle with all its competitors not possessing such improvement. The accumulation of these improvements upon each other to an unlimited extent fully accounts for the marvellous adaptations of means to ends in organic life, which were formerly supposed to have been contrived and brought about by a designing mind. Every one admits that such adaptations exist. Darwinism denies that they are purposed and intended adaptations. And this denial is based upon the Malthusian theory of Over-Population, and must stand or fall with that theory.

Then we have only to recur to the facts which have disproved Malthusianism as a principle in Political Economy, in

order to find in them also a complete refutation of Darwinism. In the Struggle for Existence between the different classes of human beings, *it is the lower classes which survive, because they are more prolific* than those above them; while the upper classes, just in proportion to the degree of their elevation, either increase very slowly, or tend to die out altogether. A victory of the lower classes in the battle for life is *a survival, not of the fittest, but of the unfittest*, so that it constantly tends to a deterioration of the race, instead of contributing to its improvement. Of course, the upper classes enter into the contest seemingly with all the advantages on their side. According to Darwinism, the odds are altogether in their favor for they have more developed, because better educated, intellects; they are free from the many peculiar temptations to vice and crime, and the countless liabilities to disease, which beset the poorer classes. On account of their wealth, they have nothing to dread from a famine, and very little from pestilence, since by removal they can generally get out of range. They are not early broken down by excessive labor; they are not crowded together in unhealthy habitations; they are protected against the extremes of heat and cold; they have abundant opportunities, by which they profit more, less, for healthful exercise in the open air. Hence they have sound constitutions and transmit sound constitutions to their children, being aided thereto, also, by a wider range of sexual selection in marriage. On account of all these favorable circumstances, the death-rate among them is very low — much lower than among those who are far beneath them in the social scale.

But all these advantages, and the improved organization which is founded upon them, if considered as means and help toward a victory of the upper classes in the battle for life, are as nothing when compared with the one signal disadvantage under which these classes labor, that the birth-rate among them, through their own fault, is very low, so that they increase slowly, or not at all. Nature is just: those who seek to be her pets are, for the very reason that they are more pampered than the others, in greater peril of extinction. Among the combatants in the great struggle, those who triumph are almost always the more prolific, and those who are satisfi

with food which, though coarser, is more abundant and accessible. Those who are rich and are high in the social scale are too dainty in their appetites. They prize too highly the luxuries, the social advantages, on which they have been fed. They will not imperil their position by contracting a hasty or otherwise imprudent marriage, or by cumbering themselves with an inconveniently large family. In countries where the distinctions of rank are so strongly defined and deeply rooted as to appear insurmountable, many are contented to lead lives of licentious celibacy, because they dread social more than moral death. And everywhere, the men of affluence and culture, the highly born and highly bred — the Brahmins of society, as Dr. Holmes calls them — prize the refinements of life, and the gratification of their social and artistic tastes, more than the homely comforts and enjoyments which any one may have who can induce some good-natured woman to share them with him. Of course, their society soon becomes very select through becoming exceedingly small. “Old families,” as they are called, have a trick of rapidly dying out, as if to make room for a race of pretenders and *parvenus*. The Faubourg St.-Germain is not the only place in the world which is tenanted by the ghosts of a departed aristocracy. It is quite unnecessary to cite statistics in order to corroborate these statements. Any one may convince himself of the truth of them who will look round among the families of his acquaintance, ascertain how many they consist of, and compare them with the families of the artisans and laborers in the next street. The poor have a much narrower range of enjoyments open to them than the rich; the comforts of domestic life are about the only ones that are easily accessible to the lowly; and who can wonder that these are early sought and highly prized?

This law respecting the relative increase of the several classes of the population is confirmed by the very fact, already mentioned, which seems at first to point to a different conclusion. When a new country is colonized, the indigenous barbarous tribes waste away before the advancing wave of civilization like snow under a July sun; and this is certainly a victory of the superior race over the inferior. But here, again, the issue is determined in the main by the comparative fecundity of the

competitors, and is but little affected by the other advantages of corporeal organization, — by slight differences in muscle, joint, and limb, — on either side. The individual savage, as a general rule, has greater tenacity of life than his civilized rival; his wants are fewer; he is satisfied with little and poor food; he can withstand greater hardships; he can live in a desert where the white colonist would starve. But no matter; he is less prolific, and therefore invariably goes down in the struggle. Even before they are invaded by a civilized race, barbarous tribes produce so few children who come to maturity, and are so wasted by petty wars and disease, that it is doubtful whether, in the long run, they ever increase in number. The North American Indians whom our forefathers found here on their first arrival were certainly inferior, both in numbers and in the mechanic arts, to the races which had preceded them. Witness the structures reared by the mound-builders, and the implements found in them. The Colonists, on the other hand, are drafted chiefly from the working-classes, who are the more prolific even before they leave their old home; and, in their new one, the cheapness of land and food, together with the scarcity of labor, causes them to multiply like rabbits. There is something almost marvellous in the rapid growth of the population in the early times in New England. Farmers, fishermen, and clergymen not infrequently seemed to vie with each other in the increasing size of their families. What wonder that the already dwindling tribes of the savages melted away before them!

When we extend our survey beyond the human race, we find the same law holds good for the whole animal and vegetable kingdoms, that the relative increase of numbers is mainly determined by the comparative fecundity of the species, irrespective of slight differences of external organization. The causes of success in the battle for life seem to be physiological, rather than morphological. Whether a given plant or animal shall be more or less prolific seems to depend, in main part, upon physiological processes internal to its constitution, and hardly at all upon the adaption of its external organs to its environment. Hence, as its chance of survivorship is not increased by any morphological improvement which may hap-

pen to be induced upon it by casual variations, that improvement is useless in the struggle and must soon disappear.

Always the lower forms, which are more prolific, tend to be perpetuated at the expense of the higher ones, which are comparatively sterile. Hence, the most remarkable cases of fecundity are found very low down in the scale — among the insects, for instance, and among the fishes rather than the mammals. Thus it is that some of the lowest genera of vegetable and animal life have come down to us almost unchanged from the earlier geologic ages ; while a multitude of higher types, far more recent in their introduction, have already died out.

This conclusion will appear still more probable in view of a fact which Mr. Darwin himself, with his usual admirable candor in setting forth all the circumstances which make against his theory, as well as those which tend to corroborate it, mentions, that in proportion as a species varies from its original type, it tends to become sterile. The cultivated races, which have been much changed by domestication, seem to be cursed with barrenness. "Sterility has been said to be the bane of our horticulture ;" and Mr. Darwin adds that, on his view, "we owe variability to the same cause which produces sterility ; and variability is the source of all the choicest productions of the garden."

An experienced breeder of domestic animals, who wrote in 1849, eleven years before Darwinism was invented, gives an amusing account of his endeavors to improve the breed of pigs. Beginning with a poor brute of the native stock, a typical specimen of all that a well-bred pig ought not to be or to do, except that it regularly produced, twice a year, a litter of sixteen, eighteen, or even twenty little grunTERS — "reduplications of mamma" — he endeavored, by a process of judicious selection and crossing, to develop a fatter and handsomer type. And he succeeded ; after not many years, the aristocratic tenants of his sties became miracles of fatness and models of symmetry. But alas ! when one attempts to improve upon nature's handiwork, "things will somehow go aglee," as the Scotch say. Now that his pigs were promoted into the upper classes of society, they seemed, like other aristocrats, to think

that they had nothing to do but to eat, drink, and grunt; they waxed fat and kicked against the old command to increase and multiply. The litters dwindled to six, four, and at length to one; "and we are inclined to think that our experience was a sort of epitome of high breeding." For he declares that the same law holds good in respect to artificial breeds of cattle; the marvellously "improved shorthorns" show an unmistakable tendency to become sterile, and to revert into the mongrels that were the elements out of which they were concocted.

So far, then, as either the various species of vegetable or animal life, or the different classes of human society, come into competition with each other at all, the balance of their respective numbers seems to be determined by the counteraction of two opposing forces; namely, by their relative fecundity, and by any peculiarities of their organization and situation which enable them to contend successfully against superior numbers. Chief among these peculiarities is the comparatively abundant supply of their appropriate food; slight morphological differences of organization either do not come into play at all, or exert little influence on the result of the contest. Since each of these forces operates as a check on the other, there is no tendency to an extreme result in either direction; neither of the competing races is pressed to utter extinction, or is capable of multiplying beyond a definite limit. Take the family of pachyderms, for instance. On Darwinian principles, the elephant must be considered as a highly developed species of pig, and therefore as having competed in a struggle for existence with its ancestral type during the immense interval of time which must have elapsed while the development was proceeding. But even now, when the superiority of organization is greater than ever, what chance has the higher animal, which produces only about six young in a century, of crowding out of existence the lower type, which multiplies from ten to twenty fold in the course of a single year? Or, on the other hand, what likelihood is there that prolific piggy will eat up all the food, and thus finally starve out his gigantic antagonist, whose size and strength enable him easily to defend his own feeding-grounds and watering-places against all intruders? Go back then, to the supposed beginning of the contest, and

ask what advantage in it would be acquired by a particular class of pigs through the very gradual elongation of their snouts, say, at the rate of half an inch in a century ; or how the long noses could have been perpetuated, on Darwinian principles, if they continued to be useless till they had nearly attained the length and flexibility of an elephant's trunk.

A similar instance may be taken from the order of the quadrumana. The anthropoid apes are assumed to be highly developed species of monkeys ; but they certainly seem to have gained no advantage in the battle for life over their lower competitors through their superior organization, but rather to have lost ground in the struggle, since they are relatively so inferior in numbers that they appear to be in some danger of extinction. Through being more prolific, less dainty in feeding, and abler to support changes of climate and other altered conditions of life, the monkeys evidently have the better chance of survival. But the higher apes certainly will not be crowded out of life merely by the greater numbers of those below them, since they are abundantly able to protect themselves against such encroachment. Here, again, the balance of opposing tendencies seems to keep the relative numbers in the competing species within definite limits, without permitting the complete triumph of either party. In many cases, the existence and the greater fecundity of the inferior races is a condition of the survival of those above them, who are thus supplied with their necessary food. Thus, the carnivora of Central Africa are more developed and more tenacious of life than the herbivorous animals on which they prey ; the latter are thus prevented from multiplying unduly, though their entire extinction, of course, would be fatal even to their antagonists. In all these cases, and an indefinite number of others that might be cited, slight morphological differences, induced and perpetuated in the manner supposed by Mr. Darwin, would evidently be of no account whatever in determining the issue of the contest.

Malthusianism, then, is as completely disproved in Biology as it previously had been in Political Economy ; and with it disappears all that is peculiar to Darwinism. There is no such Struggle for Existence as is supposed to be induced by the tendency of every species to an undue multiplication of its num-

bers. No one species of form or life has any more reason to dread being killed out in such a contest, than we human beings have to fear being starved through the over-population of the earth. And, even if a battle of this sort were possible, victory in it would not depend on superiority of organization. The existence not of the lower races, but of the higher ones, would be imperilled. We can foresee this result in our own case, whether we compare the different classes of human society with each other, or man himself, the order primates, with the inferior animals. In the grand "struggle," which will occur about the time of the Greek Kalends, the primitive stocks, such as Irish bog-trotters and Welsh peasants, would certainly "survive" the nobility and gentry, though the latter profit by the accumulated advantages of high breeding transmitted by direct inheritance through a pedigree extending back to William the Conqueror. And, in the final stage of the conflict, even these original poor representatives of humanity must die out long before some of the animals far below them. Those pests of our summer, the insect tribes, would sing the requiem of man, and feast on his remains. Accordingly, the only original and distinctive feature of Darwinism — its attempt to explain away the argument from design for the being of a God by showing that the supposed adaptations of means to ends, and the admirable complex arrangements by which every portion of a living organism is fitted to do its proper work, may all be accounted for by the blind and unconscious action of mechanical principles and physical laws, without calling in anywhere a Divine purpose or a contriving Mind — must be regarded as a baseless hypothesis. A careful study of the successive development of the higher forms of life upon the earth does not invalidate, but fully confirms, the doctrine which has been held by every great thinker, from Socrates down to the present day, that no organism could have been produced without an organizing mind.

The doctrine of the ascending successive development of the higher forms of life from the types immediately below them, each improved species first appearing in a germ transmitted from unimproved parents, far from constituting a portion of Darwinism properly so called, has been for centuries a favor-

ite speculation, an accepted theory, taught by some of the greatest thinkers in theology and philosophy that the world has ever known. It is merely the doctrine of derivative creation, or, in other words, of creation in the germ, to be subsequently developed after a longer or shorter interval. St. Augustine, Thomas Aquinas, and Malebranche inculcated this theory without offence to the Church: it was elaborately worked out and defended by Leibnitz, as an essential part of his system of Monadology; and Charles Bonnet, a follower of Leibnitz, built upon this foundation his ingenious hypothesis of the *emboîtement* of germs. Certainly, as Christian theists, holding fast our belief not only that every new species, but that each individual living organism, originated in a special act of creation, we have no quarrel with the doctrine of the successive evolution from ancestral germs of higher and higher forms of life and mind. The record of such evolution is only the story of God's providence and incessant creative action throughout the long roll of the geologic ages of this earth, and extending back, perhaps, to the successive generation of new planetary and stellar systems out of primitive chaos. Who shall tell us either when God's creation began, or when it was finished? The sole innovation of Darwinism upon this doctrine of evolution consisted in attempting to strip from it all proof of the incessant creative action of a designing mind, by reducing it to a blind mechanical process, necessarily resulting from inherent mudborn energies and productive power. And this attempt, resting solely upon the two unfounded assumptions of a battle for life and of the necessary survival of the higher organisms over the lower ones in that contest, it has now been shown, must be regarded as an ignominious failure. Yet the very making of this attempt contributed much to the speedy and joyful acceptance of the Darwinian hypothesis in certain quarters. It was the pepper which made the dish palatable to Huxley, Haeckel & Co., — that is, to those English and German naturalists whose previous bias in favor of materialism and fatalism indisposed them to recognize anywhere any proofs of the being of a God.

But we have not yet witnessed the last or the worst consequences of the Malthusian theory of Over-Population. After

inducing economical science to regard with hard-hearted indifference the misery of the poor, and to teach positive cruelty as the only means of diminishing the amount of their suffering, and after instructing Biology to deny the validity of the principal argument for the being of a God, we have still to consider the results of the adoption of this ill-omened hypothesis into what may well be called the Philosophy of Despair. The atheists of Germany, where alone the infidel doctrine is openly avowed and systematically taught in all its appalling consequences, have at last convinced themselves that Atheism leads by necessary inference to Pessimism. In their own sad experience and their reasoned reflections upon life, they have been compelled to acknowledge the fidelity of the picture which Jean Paul (Richter) presented only as an appalling "dream" — that of a world without a God. A miserable world they find it to be, destitute alike of happiness, dignity, or hope; and they passionately declare that man's life in it is merely a confused noise between two silences, and is not only not worth living, but is an intolerable burden, so that the sooner it can be shaken off the better. An orphan universe, dust-born, generated and controlled only by the pitiless action of blind mechanical forces, allowing no sense of responsibility and no sanction for morality, void of any belief in the fatherhood of God or in the brotherhood of man, is a source only of misery and despair, and the best course for the conscious beings now doomed to inhabit it is to lead it to speedy painless extinction. It is overpeopled so far as it is peopled at all. Apply "the preventive check" of Malthus, therefore, in its full extent and with the utmost rigor. Let man cease to propagate his kind. We have no right to inflict the misery of existence upon a future generation, who have not been asked whether they were willing to endure the burden, and who, as they are not yet in being, certainly cannot suffer wrong in not being called into existence, even if they should be foolish enough hereafter to regard their life as a blessing rather than a curse. The suicide of individuals is faintly condemned, not on the ground of its being in itself an immoral act, but because it would be partial and limited in its consequences, not accomplishing soon enough, if at all, the great purpose of bringing the whole

world to an end through an act of cosmic suicide. It would be awkward, it is true, openly to counsel self-murder, since those who gave such advice might be called upon to act consistently with their principles; and they confess the difficulty of ridding themselves altogether of a hankering after life, and a fear to go down into the dark. Better allow the human race to die out quietly, as it would do were there no more births. Schopenhauer does not take so lenient a view of the case, for he coarsely says, "The truth is, men ought to be miserable, and they are so;" for they have committed the unpardonable crime of being born.

These are not merely the morbid fancies of a few misanthropes and eccentric thinkers, intent only upon startling the world with their paradoxes. If they were so, it would be idle to call attention to them here, and to give them the notoriety which they covet. An isolated poet here or there, like Byron or Leopardi, can do little harm with his pessimistic imaginings; as in Dante's case, we can pardon some bad philosophy for much good poetry; and we listen with only a silent protest to the ringing lines of the noble Englishman, not fearing that any one will be made a convert by them:—

"Count o'er the joys thine hours have seen,
Count o'er thy days from anguish free,
And know, whatever thou hast been,
'T is something better not to be."

But these German atheists and pessimists have multiplied till they have become a sect formidable alike from their numbers, their ability, the fanatical zeal and persistency with which they preach their doctrines, and the extent to which they are already influencing opinion and conduct, not only in their own land, but in neighboring countries. The popularity of their writings indicates a peril with which civilization itself is menaced, through the corruption and recklessness of those who should be its safeguards—the upper classes of society. Of course, their theory is not directly upheld or advocated in any seminary of learning which is under the immediate control of the government, but is zealously controverted, I believe, by all the official teachers of philosophy. Outside of the universities, however, it has become as prevalent and as

popular as Hegelianism was forty years ago. It has emboldened the anarchists, and made the men who are avowedly endeavoring to subvert all the institutions of society more daring and reckless than ever. The most dangerous of all heresies is that which inculcates a contemptuous disregard of human life, since he who does not value his own safety will be most prompt and fearless in attacking the safety of others. Society can protect itself against the secret assassin, who has still some fear left of the scaffold and the axe as the punishment of his crime. Neither has it much reason to fear homicidal insanity, since madmen cannot act in concert with each other, and an individual is easily overpowered and disarmed. But educated men, who have come to regard their own lives as only a burden to them, though they have been driven to despair, not by the privations and miseries which afflict the hopelessly poor, but by an insensate theory which teaches them to consider the existence of the human race itself as an intolerable evil, that can be abated most effectually by reducing society to anarchy and ruin, and who have prepared themselves for the admission of this theory by getting rid of all the restraints of morality and religion—these are foes truly formidable, against whom all the precautions and means of defence which governments can institute seem to be of little avail. This is the real ground of the terror recently inspired by the Nihilists in Russia, and by the leaders of what is called “the social democracy” in Germany. These men have made themselves *hostes humani generis*. In the former case, the numerous adherents of the sect appear to be drawn exclusively from the upper classes of society, the populace being not only not with them, but against them, since the lower ranks believe both in religion and the Czar. In Germany, where infidel opinions have filtrated lower down through the strata of society, the laboring class have joined to some extent in the movement; but the leadership of the party, both in theory and action, seems to be entirely in the hands of reckless, educated men. These are the persons who recently attempted to assassinate both the Emperor William and the Czar, and it is against them that the energetic proceedings of the Government in both cases have been directed. In each instance, the

assassin seems to have attempted murder chiefly as a means of committing suicide, but with some hope also, through the turmoil and possible anarchy thus produced, to have accomplished something toward bringing the universe itself nearer to its termination.

This lamentable state of things in respect to the opinions and the conduct of those who should be the better classes of society is not without a parallel at an earlier stage of the world's history. We find a near approximation to it, if not its perfect counterpart, in the character and behavior of the Roman patriciate under the Empire ; and a striking portraiture of its leading features might be drawn from the gloomy writings of Tacitus, Juvenal, and Suetonius. Most of the Emperors were bad enough, but they were no worse than the classes whence the Emperors were drawn, the patricians, the senators, and the high officers of the army and the administration. The old polytheistic religion had died out with these men, and a new system of faith had not yet found access to their minds. They had ceased to believe in anything except a debased form of Epicureanism and the fatalism of the Stoics, which pointed directly to suicide whenever the means of sensual pleasure were exhausted. They were not cowardly or feeble in character, or uninstructed ; they had all the refinement and culture which belonged to their age, possessing either immediately, or by direct inheritance, the brilliant accomplishments, the learning, literature, and art of the Augustan period. They were not void of ambition and energy, since the only things which, in their eyes, still gave any zest to life were wealth, pomp, and power. They played for high stakes in any desperate project for amassing these prizes ; and if the game turned against them, and a brief intimation of the Emperor's will arrived, they assembled their friends for a final joyous banquet, and then cheerfully swallowed poison or opened their veins in a bath. Life's poor play was over, and they deemed themselves well rid of it. As they were men of utterly profligate lives, and there was almost a general license of divorce, they had no family attachments ; either they did not marry at all, or they took good care not to cumber themselves with children. Juvenal indignantly reproaches them for the means employed to this end.

“Sed jacet aurato vix ulla puerpera lecto,
Tantum artes hujus, tantum medicamina possunt.”

For those who had great wealth, the surest mode of increasing their power and influence was to remain childless, and to hold out hopes to legacy-hunters and those who sought to become their adopted heirs; thus they surrounded themselves with a stronger crew of adherents and dependents. Even the Emperors, most of whom were childless, endeavored in this way to fortify their hold upon power; and the adopted Cæsar, by taking immediately an active share in the government, was allowed to taste by anticipation the joys of being the absolute master of the civilized world. The wiser heads among them, Augustus and Trajan, saw the extent of the evil; they perceived that the interests of civilization were at stake, and that the state was in peril through the rapid dying out of the very classes which should have been its ornament and defence. They endeavored to apply a remedy, by multiplying laws in favor of marriage, and offering bounties and privileges to the heads of families containing children. The *jus trium liberorum*, by which the parent having at least three children was freed from all personal charges, was but one of a large number of enactments having the same end in view. But the plague had spread too far and struck too deep to be arrested by any process of legislation. The upper classes of society continued to dwindle away and vanish from the stage, as if not only their morals and their civilization, but their very blood, had become corrupt; and Rome at last fell because there were no longer any proper Romans left to defend her against barbarian inroads.

German Pessimism, as a system of philosophy, is of very recent origin, though it has been rapidly developed into a complete theory of metaphysics, æsthetics, and ethics, and is already practically applied as a body of principles to the regulation of the thoughts and the conduct of man. It is not older than Schopenhauer's principal work, “The World as Will and Presentation,” which was nominally published in 1818, though it hardly became known or exerted any appreciable influence before about 1850. Since that date, the discussion of the subject has been active, and the doctrine has rapidly gained

ground, its adherents constituting a numerous and zealous sect, so that the literature devoted to it is already of considerable dimensions. Besides Edward von Hartmann, who in learning and ability has certainly the chief place among them, and in popularity and influence is not second to any of his philosophical contemporaries, a host of others have published works of more or less note in exposition and defence of the system. Among them may be mentioned Frauenstädt, Bahnsen, Taubert, Mainländer, Venetianer, and Du Prel. The two works bearing immediately upon that portion of the subject with which we are here specially concerned are, first, Philip Mainländer's "Philosophy of Redemption," a thick octavo, written with much literary skill and a fervid eloquence, which was published at Berlin in 1876, and, secondly, Von Hartmann's "Phenomenology of the Moral Consciousness," a very elaborate work, which first appeared in the same city only at the beginning of the present year (1880). Each of these books particularly considers the duty and the means of effecting what they call "the salvation of the world" — that is, of redeeming the universe from the burden of its miserable existence.

There is a wide difference of opinion among the doctors of Pessimism in respect to the course of action to be pursued, and the conduct which is to be enjoined upon their disciples. While they are all agreed as to the *end* in view, as to the expediency and the duty of bringing the world to an end as soon as possible, they differ in respect to the *means* to be employed, and the practicability of effecting their purpose at an earlier or a later day. None of them directly and openly counsel suicide, as it would be inconvenient for them to be called upon to "reck their own rede," and as the advice at best would be followed only by the proselytes of the sect. As yet, these are to be found only among the educated classes in Russia and Germany, and their disappearance from the stage would stop the dissemination of their principles, while the rest of mankind would then multiply all the faster. Only Schopenhauer, whose suspicious and gloomy temperament made him familiar with the darkest possible aspects of life, indirectly favors self-murder, by advising men no longer to have any volitions whatsoever, and thereby, through mere passivity and inani-

tion, to fall back into the comparatively happy realm of nothingness whence they came. Hartmann justly objects, that this amounts to a recommendation of the most painful form of death, by voluntary starvation, and would merely induce those who as yet are not converted to Pessimism to increase in number more rapidly than ever, in order to fill the opening thus created. The disappearance of the enlightened few would thus tend to a permanent deterioration of the race, though not to its annihilation, nor to a permanent diminution of its numbers; since the indolent, the reckless, and the base would soon occupy the ground which better men had foolishly abandoned.

The bitter spirit in which Mainländer writes is well indicated in a quotation which he makes from the posthumous memoirs of Alexander von Humboldt. "I was not born," says Humboldt, "in order to be the father of a family. Moreover, I regard marriage as a sin, and the propagation of children as a crime. It is my conviction also that he is a fool, and still more a sinner, who takes upon himself the yoke of marriage — a fool, because he thereby throws away his freedom, without gaining a corresponding recompense; a sinner, because he gives life to children, without being able to give them the certainty of happiness. I despise humanity in all its strata. I foresee that our posterity will be far more unhappy than we are; and should not I be a sinner, if, in spite of this insight, I should take care to leave a posterity of unhappy beings behind me? The whole of life is the greatest insanity. And if for eighty years one strives and inquires, still one is obliged finally to confess that he has striven for nothing and has found out nothing. Did we at least only know why we are in this world! But to the thinker, everything is and remains a riddle; and the greatest good luck is that of being born a flathead."

And to arrive at this conviction, we should add, is the natural consequence, even for the largest intellect, of having lived for eighty years in the world without any belief in the being of a God, and without any nobler purpose than that of self-aggrandizement. What Mainländer immediately adds to this extract, though intended as a eulogy, is in truth a bitter satire upon Humboldt's words and his conduct: "'Did we at

least only know why we are in this world !' Then, in the whole rich life of this highly endowed man, there was nothing, absolutely nothing, which he could have apprehended as the ultimate end and aim of life. Not the joy of creating ; not the priceless steps of genius advancing in knowledge ; absolutely nothing."

Very true ! Without any consciousness of a higher purpose as our being's end and aim than the mere gratification of curiosity, though this be dignified with the sounding name of "the advancement of knowledge," life would be destitute of either dignity, grace, or importance. It would not be worth living.

In fact, this quotation from Humboldt contains the gist of Mainländer's whole Philosophy of Salvation. He has but one lesson to teach, and but one duty to inculcate : it is that of celibacy and perfect chastity. In his preface, he boasts that he has not allowed atheism any longer, like religion, to rest upon a foundation of faith, but that its truth has been by him for the first time scientifically demonstrated. In his view of coming death, therefore, the wise man will no longer be troubled by any apprehension of a hereafter. Undisturbed by the thought either of a heaven or a hell, he will welcome the death-stroke as his introduction to a haven of rest, as the end of a life which has been only a prolongation of turmoil, labor, suffering, and anxiety. Nothing could sadden his last moments of consciousness, except the reflection that he was to live again in his children ; that, in order to procure for himself a brief enjoyment, he had inflicted upon others the burden of an intolerable life, and thereby, in so far, had prolonged the sufferings of the universe.

On the other hand, Hartmann earnestly protests against following such advice, on the ground that it would only intensify the action of causes already at work by which the highest interests of civilization are imperilled. His philosophy, like that of Hegel, prides itself on the reconciliation of contradictory principles, and is probably indebted to this its Janus-faced aspect for much of its present popularity. Thus he is an Optimist, because he holds, like Leibnitz, that this is the best possible universe ; but he is also a Pessimist, on the

ground that the best is bad enough, and the present universe is so bad that it would be far better if it did not exist at all. In every respect, non-being is preferable to being, for it is incapable of the suffering which is inseparable from the very nature of existence. The only question left concerns the proper choice of means for bringing the world to a speedy and effectual termination; and Hartmann maintains that, far from checking the growth of the population, the best course is to increase and multiply as fast as possible. In proportion as the human race becomes more numerous, the Struggle for Existence will be fiercer and more desperate, the misery so produced will be greater, and the combatants will be the sooner reconciled to the idea of giving up the fruitless contest altogether, and sinking back into the comparatively blissful repose of nothingness. Our duty, then, is not only to favor the growth of population, but in every way to promote the progress of enlightenment and the spread of civilization. Mankind must be educated up to Pessimism; all classes, all tribes and nations, must become convinced of the folly and misery of existence, before a concerted and vigorous effort can be made to get rid of the burden altogether. Meanwhile, not by a cowardly and selfish withdrawal from the conflict, as Schopenhauer and Mainländer recommend, leaving the ignorant multitude behind, deprived of their leaders and teachers, to multiply and suffer more than ever, but by entering heartily into the battle for life, bearing its sorrows and teaching others to bear them, may we hope to promote the final redemption of mankind from the woes which now afflict them.

Three illusions must be entirely overcome, according to Hartmann, before this consummation can be reached. The first consists in supposing that positive happiness is attainable by individuals in this life, at the present stage of development of the world's history; and he argues at great length that this doctrine is confuted by experience. The second illusion is the belief that such happiness may be acquired hereafter, in a transcendent and immortal life beyond the grave; and this belief is rejected, of course, as it conflicts at every point with the tenets of Pessimism. The third stage of the illusion is that dream of the future perfectibility of the human race in

ich Condorcet and Godwin indulged, which is to be realized on the Philosophical Radicals shall have so far reformed laws and political institutions as to establish upon this earth ; perfect reign of liberty, equality, and fraternity ; to have ally dissipated this dream, as we have seen, is the glory of Malthusianism. Aid, then, in every way the advancement and diffusion of knowledge ; for " he that increases knowledge increases sorrow," and men will thus the sooner outgrow these three forms of illusion. Favor the increase of numbers also, civilization will thus be more rapidly diffused over all lands, and the evils caused by Over-Population will tend more and more to convince mankind of the misery of existence and the expediency of bringing the universe to an end. Positive happiness is unattainable ; but negative happiness, the painlessness of non-existence, is a goal within our reach. There will at least a rest from sorrow in the grave of all things.

If the advice of Mainländer were followed, Hartmann argues, the only consequence would be to degrade and brutalize humanity, to give ignorance, feebleness, and stupidity the victory over intellect and character, and to make the world more populous than ever with a debased type of inhabitants. Unhappily, many causes are even now at work to bring about a very undesirable issue. The tendency, already noticed, of the educated classes to die out altogether, while those far below them in the scale are multiplying with ominous rapidity, is the plague-spot of our modern civilization. I have pointed out its deplorable results in the case of the Roman Empire ; and the speedy decline and corruption, after the age of Demosthenes, of Athenian culture and refinement, are probably attributable, in a considerable degree, to the action of the same cause. It is the inherent vice of an aristocracy of wealth and intellect, who are intent upon nothing so much as the adoption of any efficient means for preserving the superiority of their class above the vulgar. But it is a suicidal policy ; while it has a deceptive semblance of strengthening the position and influence of individual families, through preventing these advantages from being parcelled out among too many heirs, it is destructive of the best interests of the class as a whole, and must soon lead to its entire extinction. Civiliza-

tion cannot be kept alive and transmitted undiminished to posterity, if the members of the educated classes think it a burden to have large families, and if even the women prefer to find some other vocation in life than that of bearing children and educating them. If a process of what the Darwinites would call "negative selection" is to go on, if only the creatures of a lower type are freely to propagate their kind, the average level of the species must be lowered, and a general deterioration of society is inevitable. Persons of wealth, culture, and refinement, instead of adopting the selfish policy of Mainländer, and taking care only for their personal redemption from the ills of life, should seek rather to transmit by inheritance their high qualities of mind and character to a future generation, and teach their children how to use these personal advantages in continuous efforts to promote the civilization and ennoble the type of humanity. If they do not fill the vacant places on the earth's surface, these will soon be occupied by the progeny of the ignorant and the debased, who, in this respect, are the dangerous classes of society.

BLAISE PASCAL.

FROM THE NORTH AMERICAN REVIEW FOR APRIL, 1845.

GREAT precocity of genius, however developed or employed, seldom fails to excite at least as much alarm and pity as admiration in the judicious spectator. If not in itself a token of disease already formed, and working as a stimulus on the brain, it is sure to lead quickly to some morbid action of the physical frame, and ere long to dry up the fountains of life. It seems as if only a given amount of work can be done. If more is accomplished at an early period, a shorter term of life remains for further achievements. Hence a note of lamentation, a mournful presentiment, always mingles with the admiring applause which greets every new and wonderful effort of a youthful prodigy. We mourn that this early excellence should be purchased at so high a price, — that premature strength and beauty of mind should be doomed to premature decay.

Blaise Pascal, the boy Euclid, the contemporary and peer of Torricelli, Huygens, and Descartes, the scourge of the Jesuits, the boast of the Port Royal school of theologians and philosophers, the earliest writer of correct and elegant French prose, the master in eloquence of Bossuet, and the object of the unwilling homage even of Voltaire, died at the age of thirty-nine. All his important writings, except the "Thoughts," which was a posthumous publication, appeared several years before his death; and his most valuable contributions to science were made before he was thirty. As a boy, he seemed miraculously endowed, and the abundant promise of his youth was fully sustained by the rich fruit of his early manhood. Bodily weakness and suffering, to which he was a lifelong martyr, far from impairing, seemed only to heighten the preternatural acuteness and strength of his intellect, as a hectic

flush improves the beauty and expressiveness of the features. All that he accomplished in science and philosophy, great as was its intrinsic value, only leaves the impression that he had much in reserve. His discoveries and inventions are rather the indications, than the full fruits, of the vigor and comprehensiveness of his genius. They showed what he might have done, if his ambition had been greater, or if it had not been so early checked and turned into a different channel by religious enthusiasm.

No full and satisfactory account of his life and works has ever appeared. There are eulogies upon him in plenty, but they give only a meagre and fragmentary view of his labors, and supply few materials for a complete portrait of his character and genius. The memoir of him by his sister, Madame Perier, who shared the fervor of his religious feelings, is short, and gives us little more than a record of his bodily sufferings, and illustrations of the remarkable purity, generosity, severity of principle, and self-devotion, which characterized his whole life. Later authors among his countrymen, though they have added but few facts to his biography, have done full justice to his scientific merits, have celebrated his wit, his acuteness, and his eloquence, and have paid a willing tribute of admiration to the unequalled vigor, terseness, and purity of his style. The best of these later accounts is by Sainte-Beuve, in his elaborate history of Port Royal.

Blaise Pascal was born in the summer of 1623, at Clermont, the capital of the Province of Auvergne, in France. His father, Etienne Pascal, who had himself attained considerable reputation as a man of science and letters, superintended the education of his only son with rare devotion and judgment. That he might obtain greater facilities for instruction, he gave up the office which he had held at Clermont, and came to reside in Paris, when Blaise was but eight years old. As the mother had died five years before, the boy was entirely dependent on paternal aid, and the signs which he had already given of extraordinary natural endowments were enough to determine the father not to enter him at any college, but to take the whole task of his education on himself. So precious, though so frail, a gift of Providence, the delicacy

of his bodily constitution being already apparent, was not lightly to be intrusted to the hands of strangers. The intention of the elder Pascal was, that his son should study only the languages during his tender years, with a view to cultivate the memory and the taste, while the more manly and exacting pursuits of mathematical and physical science were to be the employment of his early manhood. This wise scheme was frustrated by circumstances and the precocity of the child's genius.

The elder Pascal belonged to a small association of scientific men, among whom were Mersenne, Roberval, Le Pailleur, and Carcavi, who came together occasionally, in an informal way, to discuss new inventions and discoveries, and who kept up a correspondence with persons in the provinces and in foreign countries, who were interested in the same pursuits. They met in turn at the houses of the several members, and were united as much by personal regard as by the similarity of their tastes and occupations. The Academy of Sciences, which was established in 1666, was formed out of this society. Young Pascal was usually present at the meetings when they were held at his father's house, and the conversations which he heard probably stimulated his curiosity the more from the very fact that he was not allowed to study the subjects of the debate in books. When he was but twelve years old, his sister tells us, he wrote a short treatise upon sounds. He was eager to know the nature of geometry, of which he had often heard the associates speak. His father told him generally, that it related to the measurement of bodies, and showed how to construct figures with accuracy, and to ascertain their relations to each other. More information was refused; but a promise was given, that he should study the subject after he had learned enough Latin and Greek. The importunate curiosity of the boy could not tolerate this delay. During his leisure hours, he shut himself up in a chamber, and with a piece of charcoal traced figures upon the floor, such as parallelograms, triangles, and circles, seeking to find their relative dimensions. He knew not even the names of these figures, but called a circle a *round*, and a line a *bar*. Definitions and axioms he framed to suit himself, and in this way proceeded

by degrees, as we are told, till he came to a knowledge of the thirty-second proposition of Euclid, that the three angles of a triangle are equal to two right angles. While thus engaged, he was one day surprised by his father, who was naturally amazed at the progress made under such circumstances, and ran immediately to communicate the fact to his intimate friend, Le Pailleur. After this discovery, no further restraint was put upon the boy's genius. Euclid's "Elements" were given to him, and he read the book by himself, without asking any aid, before he was thirteen years old.

This account is given by the elder sister, who was in the family at the time, and must have known the facts; and as her character does not allow her veracity to be questioned, there seems no room to doubt its substantial accuracy. It was published, also, when some of the associates of the elder Pascal were still alive, who could have refuted any misstatement. Yet the story seems so marvellous, that many have considered it a mere fable. The only part of the statement that is really incredible, however, is the explanation of the process, or method, by which the boy arrived at such astonishing results. The order in which geometry is *taught* in the books is surely the very reverse of that in which the great truths of this science were first *discovered*. Instead of beginning with axioms and definitions, and advancing through the more simple propositions to the more complex, the process must have begun with the discovery, either by accident or measurement, of some advanced theorem, and, in seeking to demonstrate this, subsidiary truths came to light as the media of proof. Pythagoras certainly was acquainted with the famous proposition about the square of the hypotenuse, before he was able to demonstrate it. Euclid teaches the elements synthetically; he discovered them by analysis. Now, if we suppose that Pascal, in the scientific meetings at his father's house, had overheard mention of the fact that the three angles of a triangle are equal to two right angles, and endeavored to discover the proof of this theorem, the story ceases to be incredible, or even very remarkable. If we consider the astonishing acuteness and vigor of his mind, as subsequently displayed in other ways, it seems quite probable, that he succeeded in in-

scribing a triangle in a circle, and in ascertaining that an angle at the centre is twice as great as one at the circumference standing upon the same arc, whence the passage to the truth he was seeking to demonstrate is obvious. He may have found out more or less than this; the account on which we rely being quite indefinite as to the particulars of his achievement. The only thing really marvellous about it is, that a boy twelve years of age, without advice or instigation, should have troubled himself at all about the matter.

But the progress of his studies was now interrupted by domestic misfortunes. His father incurred the resentment of Richelieu, by offering some opposition to an arbitrary plan for cutting short the income attached to the Hôtel de Ville. An order was made out for committing him to the Bastille; but obtaining seasonable notice of it, he fled from Paris, and concealed himself in his native province of Auvergne. A singular circumstance aided the talents and filial piety of his children, to which he was at last indebted for restoration from this exile. The Cardinal, it is well known, had a passion for dramatic performances, and even wrote a play himself, which was quite bad enough to be worthy of a prime-minister. He took a fancy about this time, that a tragi-comedy by Scudéri, called "*L'Amour Tyrannique*," should be represented in his presence by a party of young girls. The Duchess d'Aiguillon, who had charge of the affair, selected Jacqueline Pascal, then about thirteen years old, the younger sister of Blaise, to be one of the performers. The representation took place on the 3d of April, 1639. Jacqueline acted her part like a little fairy, and her grace and spirit quite captivated the spectators, and excited all the good feelings of Richelieu. It had been arranged, that the little actress should approach the minister at the close of the piece, and recite some verses pleading for the restoration of her father. She did so with a degree of simplicity and earnestness that delighted the Cardinal, who embraced her as soon as she had finished, and exclaimed, "Yes, my child, I grant all that you ask for; write to your father, that he may immediately return with safety."

The elder Pascal returned to Paris, and was received with great kindness by Richelieu, who soon afterwards appointed

him to an honorable and lucrative office in the government of Rouen. He removed his family to that city, and the numerous accounts and calculations that were necessary in his official business were confided to his son. Weary of the prolix and monotonous processes of arithmetic, the young man endeavored to invent some mechanical means of executing the work. After two years of intense application, he produced the celebrated arithmetical machine which bears his name. It was a marvellous effort for a boy of nineteen. Leibnitz speaks of it with admiration, and made some attempts to improve it; and in our own day, the magnificent project of Mr. Babbage, which seems fated never to be anything more than a project, is a mere revival and amplification of the ingenious contrivance of the young Frenchman. The complexity of the work prevents us from giving a detailed description of it. It is enough to say, that it executes all the lower processes of arithmetic with quickness and certainty, and performs some of the more complex and difficult operations. The arithmetical triangle, invented by Pascal in 1654, is a natural complement to this machine. It gives the coefficients of a binomial raised to any power denoted by an integer, so that it is in part an anticipation of Newton's beautiful theorem. It was applied, also, to the theories of combinations and probabilities, facilitating the calculations in each, and indicating certain results in them not before known.

Pascal was proud of these inventions, and with good reason, considering their fertility and the originality of the ideas on which they rest. He says, that the operation of his machine resembles, far more than the instinct of animals, the workings of the human intellect. In 1650, he sent one of the instruments to Queen Christina of Sweden, with a letter which is a perfect masterpiece of tact and delicacy in complimentary address, and shows that the writer was not more a man of science than an accomplished French gentleman. But the cost of the machine, and its liability to get out of repair, prevented it from coming into extensive use; and the invention of logarithms renders all contrivances of this class in a great degree unnecessary. In speaking of the mechanical skill of Pascal, his biographers uniformly attribute to him the invention of

the wheel sedan-chair and the truck, though it is difficult to believe that these simple instruments were not in use long before his time. He probably made some marked improvements in the common mode of constructing them.

It would be tedious to dwell upon the history of Pascal's discoveries in mathematical science. They were conspicuous and important enough to attract the attention and envy of Descartes, who seemed to arrogate to himself at this period the whole province of pure mathematics as his particular domain. The researches upon the theory of the cycloid, inferior as they are to the results since obtained so easily by the use of the infinitesimal calculus, must be regarded as almost miraculous achievements of the geometry of Pascal's time. The calculation of chances, various problems in which are so complex and far-reaching as to tax the utmost resources of the improved science of our own day, owes its earliest development, and the establishment of some of its most important principles, to the genius of this youthful mathematician. Huygens, to whom the praise of originating the true theory of games of chance is sometimes awarded, frankly avows, in the preface to his work on this subject, that the invention does not belong to him, as "all these questions have already been discussed by the greatest geometers of France." In truth, the work of Huygens appeared in 1657, while the solutions of Pascal were well known in 1654, when he was but thirty-one years of age. The subject was proposed to him by a celebrated gamester, who wished to know in what proportions the stake should be divided between two players, if they agreed to separate without finishing the game. Pascal solved the problem in its most general form, so as to divide the sum equitably among any number of players who might be engaged. Roberval and Fermat, two of the most distinguished mathematicians in France, attempted to answer these questions at the same time; the former failed entirely; the latter succeeded by applying the theory of combinations. Pascal, who had solved the problem by another method, believed at first that the solution by Fermat was not correct, although the result agreed with his own; but on further examination he retracted this opinion, and acknowledged that the process was equally accurate and elegant.

Passing over Pascal's other mathematical labors, though many of them are of considerable note, we come to his contributions to physical science, which afford still more remarkable proofs of the premature vigor of his intellect. His celebrated experiments upon the weight of the atmosphere put the seal of demonstration upon one of the greatest discoveries of modern times. Torricelli suspected that the ascent of water in a common pump, which had hitherto been attributed to nature's repugnance to a vacuum, was really due to the weight of a column of air, which balanced the column of fluid. Mercury is about thirteen times heavier than water, and thirty inches is about the thirteenth part of thirty-three feet. In other words, the power which supported the two fluids, whatever it might be, was constant in respect to weight, since the elevation of the two fluids was inversely proportional to their weight. Torricelli believed that this power was the pressure of the air, or that a column of air as high as the earth's atmosphere was as heavy as thirty inches of mercury, or as thirty-three feet of water. But he could not prove this; his supposition, it is true, explained the facts; but it did not exclude other hypotheses which might be framed to account for the same phenomena.

The experiment of Torricelli, which was, in truth, the invention of the barometer, was made in 1645. Its result had been predicted by Descartes; but the explanation offered by both these philosophers had at first but small success among the learned. The doctrine of the repugnance of nature to a vacuum had been too long established to give way readily to a truth which was not as yet demonstrated. The supposition was gravely made, that some *subtile matter*, or *ether*, evaporated from the surface of the water or the mercury, and filled the apparent void in the top of the tube. Pascal at once adopted the views of Torricelli and Descartes, and repeated the experiments of the former in 1646, with some variations, which still further discredited the old doctrine. He used tubes of great length, and thus proved that nature did not dread a great vacuum any more than a small one. He employed a tube bent in the form of the letter U, and having invented an apparatus for admitting at intervals small quantities

of air into the top of one of the branches, he found that the mercury descended there just as fast as the air was admitted, while it remained stationary in the other branch. The results of these experiments, and the arguments founded upon them, he published in 1647, in a little book entitled "New Experiments respecting a Vacuum."

But Pascal saw with pain, that not one of the tests or arguments hitherto employed was absolutely decisive of the point at issue. After long and painful reflection upon the subject, he at last matured the idea of an experiment, which would leave no room for cavil, and would establish the true doctrine irrevocably. If the air be a weighty fluid, each horizontal stratum of it must be pressed by the accumulated weight of all the superincumbent strata, and the pressure must therefore diminish as we rise above the surface of the earth. Now, if it be the pressure of the air which sustains the column of fluid, let the instrument be carried to a considerable height in the atmosphere, and the mercury must fall to a lower point in the tube. In order that the difference in the height of the mercury might be very perceptible, and leave no pretext to doubt its reality, it was necessary to raise the tube very high in the air. The mountain called the Puy-de-Dôme, which is in the neighborhood of Clermont, and is about three thousand feet high, offered a suitable means for accomplishing this object. On the 15th of November, 1647, Pascal communicated his project to his brother-in-law, M. Perier, who was about to visit Clermont, and charged him to make the trial as soon as he arrived there. Various circumstances delayed the execution of the plan ; but it was tried at last, with all possible exactness, on the 19th of September, 1648, and all the phenomena were observed which Pascal had predicted. The mercury began to descend in the tube as they climbed the mountain's side, and on the summit it was more than three inches lower than it had been at the base. As they descended, the column rose again, till they reached the plain, where it had the same elevation as at first. In another tube, which had been observed meanwhile on the plain, no alteration had taken place. Pascal made similar experiments at Paris, by means of the very lofty tower of St. Jacques-la-Boucherie, and obtained corresponding results.

Herschel, quoted with approbation by Mr. Hallam, calls this famous experiment "a *crucial instance*, one of the first, if not the very first, on record in physics." Indeed, the whole history of Pascal's investigations respecting the pressure of the atmosphere is such a striking and beautiful illustration of the Baconian system, that we must believe he had studied the "*Novum Organum*," an edition of which was printed in Holland in 1645, just a year before Pascal began his work. His final success appears the more remarkable, when we consider that he was not yet twenty-five years old.

The experiments upon the pressure of the atmosphere naturally led Pascal to some more general inquiries respecting the equilibrium of fluids. He wrote two treatises upon this subject and upon the weight of the air, which were finished in 1653, though they were not published till after his death. They contain the record of some ingenious experiments, and many general views, which were considerably in advance of the science of his time. He remarks, that the air is a compressible and elastic fluid, and cites, as a proof of this, a trial which he had caused to be made on the Puy-de-Dôme, where a balloon partly filled with air at the base, on being carried to the summit, was entirely distended; it shrunk again as the party descended the mountains, and regained its former volume at the foot. He made some observations, also, on the changes to which the column of mercury is exposed, while kept at the same place, proceeding from the variations of the weather. He did not, indeed, divine all the barometrical uses of this instrument, though he seems to have accomplished more in this way than any one of his contemporaries.

If we except the mathematical inquiry respecting the cycloid, which was taken up rather as a diversion during his last illness, it may be said, that Pascal's scientific labors terminated when he had attained the age of thirty. It is not surprising, then, that their results should hardly appear so numerous and brilliant as those obtained by one or two of his illustrious contemporaries, in an age which was the most remarkable, perhaps, for the progress of science and the development of the human mind, of any in the history of the world. But as indications of what he might have done in a longer pe-

riod, or under more favorable circumstances, — as evidence of the vast power and fertility of his youthful intellect, they will never cease to command the wonder and admiration of mankind.

The father of Pascal died in 1651; and two years afterwards, his sister Jacqueline, to whom he was tenderly attached, retired forever from the world, by uniting herself to the company of pious recluses at Port Royal. Anxious to show the fervor of her religious faith, and her grateful feelings towards the brother who had first directed her own steps to the path of peace, she sought to win him also from the world, by causing him to renounce his former studies, and to seek only for the things of heaven. Various circumstances aided the execution of this pious scheme. An attack of paralysis, several years before, had nearly deprived him of the use of his legs, and diseases of the nervous system and the stomach had now brought him to the verge of the grave. There was no course left for him but to abandon his engrossing labors, at least for a season, to turn his thoughts to other subjects, and patiently to await either the partial restoration of his health, or a final release from earthly suffering. During the tedious hours of illness, his mind reverted to the religious counsels he had received in his youth. His father had carefully sown in his mind the seeds of piety and Christian faith. These had remained quiet, though not wholly inoperative, during his early manhood, while the whole force of his intellect was directed to scientific pursuits. But they sprang up with a most luxuriant growth, when these pursuits were forcibly interrupted for a time by physical suffering. The objects for which he had hitherto labored so strenuously now lost all value in his eyes. The memory of youthful triumphs was no longer pleasant; the reputation he had already gained, the hopes of still greater distinction which he had once cherished, were now ranked among the vain joys and aspirations of a world which seemed to be fading from his sight, as another one of more glorious promise opened to his view from beyond the grave. He resolved to mortify his ambition and love of science, to quench even the natural spark of family affection, to deny himself the ordinary comforts of life, and to devote

his whole soul to the contemplation of God and a future life. He became a recluse, an ascetic, an enthusiast; we will not say, a fanatic, for his cruelties were lavished only on himself. The end was not yet; a few more years remained to him, during which his achievements in defence of persecuted innocence and religious truth were destined to surpass in splendor his early contributions to the cause of human learning.

During the extremity of bodily pain, this change of purpose wrought so powerfully on his mind, that at one time he was probably on the brink of insanity. As he slowly and imperfectly recovered, the intensity of feeling subsided in some degree, but was revived and made permanent by the consequences of an accident. As he was crossing the Pont de Neuilly in a carriage, the horses became restive and unmanageable, and at a point where there was no railing to the bridge, they leaped into the river. Fortunately, the traces broke, and the carriage stopped on the brink; but the frail system of Pascal received a shock so violent that he fainted, and was with great difficulty restored to consciousness. The alarm and the jar of the head which were thus caused had a sensible effect on his excited imagination, and he became subject to a kind of false sensation not uncommon in certain forms of mental disease. He saw a frightful precipice yawning continually at his side; and though his reason convinced him that it was unreal, he could not resist the terror which it occasioned. We find indistinct notices of a sort of vision or ecstasy, which he had soon afterwards, and which was attributed to the same cause. As a memorial of this vision, he preserved for a long time a paper on which were written the day and the hour when it occurred, and some detached pious meditations; and this paper he constantly carried about with him, as if it were an amulet, concealed within the lining of his dress. It is difficult to say, whether this was an effect of partial insanity, or of some superstitious idea which he had connected with the vision. At any rate, he considered the accident on the bridge as a warning given to him by Heaven to break off all human engagements, and to live in future for God alone. It is painful to read the minute account given by his sister of the privations and sufferings imposed upon him-

self by this unhappy enthusiast, during the remainder of his life. Great as these austerities were, they never altered the sweetness of his disposition, nor impaired the astonishing vigor and acuteness of his intellect, whenever he had occasion to use his pen in the cause of truth.

Pascal now became an intimate friend of the most distinguished Port Royalists, and though he never formally united himself to their society, he was accustomed to make them long visits, and was led to espouse their doctrines, and to take an active share in the controversies in which they were then engaged. Among the more eminent of their number, to whom he became particularly attached, — similarity in taste, opinion, and ardor of devotional feeling being the bond of union between them, — were Arnauld, Nicole, De Sacy, and Lancelot. Of the remarkable association, of which these men were the brightest ornaments, and which was at once the glory and the shame of France during the seventeenth century, our limits will not permit us to speak at length; but some notice of it is necessary, in order to make intelligible the history of the bitter controversy it waged with the Jesuits, when the genius of Pascal came to its rescue at the hour of its greatest need, and delayed for many years its destruction by the hands of its powerful and bitter antagonists.

The effects of the Reformation were hardly more conspicuous upon the feelings and conduct of those who separated from the church of Rome, than of those who remained within its pale. Fiercely assaulted from all quarters, the ancient Mother found greater resources in her own bosom than she had ever counted upon in her hour of prosperity. Opposition developed her strength; shame and rivalry purified her morals and reduced the number of her corruptions; and the piety of many of her faithful children kindled into a brighter and purer flame, as they looked round for means of defence against the enthusiastic and unrelenting Reformers. The fanaticism of a Spanish soldier, turned monk, created the order of the Jesuits, the most effective militia ever organized for the purposes of ecclesiastical warfare. Fervor of devotional feeling, kindled by the exciting religious controversies which then agitated Europe, gave birth, among other sects, to that of the

Port Royalists, or Jansenists, of France, composed of persons who still adhered with unflinching fidelity to the see of Rome, though in practice, and in many points of doctrine, they were more nearly allied to some parties among the Reformers. Two associations, animated by principles differing so widely from each other as those of the Jesuits and the Jansenists, could not long coexist in harmony within the same pale. Disputes on points of faith were carried on with bitter recriminations; and the contest proceeded so far, that the entire destruction of one or the other party at last became inevitable. Rome temporized as usual, but was obliged to act at last; and the suppression of the monastery of Port Royal, and the persecution of the Jansenists, showed how highly she valued the unscrupulous services of the followers of Loyola.

The controversy, so far as it was exclusively doctrinal, turned on the dark problems of predestination, free will, and saving grace, which have been almost constantly agitated in the Church during its whole history, and are still as far from a satisfactory solution as ever. The pious enthusiasm of the Jansenists, leading them to confess their utter unworthiness in the sight of God, and their total incapacity to execute the divine commands, caused them to accept in all its severity the gloomy doctrine of St. Augustine. They held, that the grace of God is free and irresistible; it is conferred upon the elect, not in consideration of their own merits, but by arbitrary appointment; they cannot obtain it by their own acts, nor resist its effects whenever it is vouchsafed to them. Man is born with so strong an inclination to sin, that, without extraordinary aid from the Deity, he cannot perform a pious act. The human will is absolutely passive; so that a good action, even after conversion, cannot be ascribed in any proper sense to the human agent, but is due to the operation of the Spirit. It is God that worketh in us, both to will and to do; and there has been no free will for the creature since Adam's time, except to do evil. It is not denied, that all men may be converted, *if they wish* for conversion; but they *never can wish* for it, unless the grace of God is imparted to them for that end.

Appalling as this doctrine seems, when nakedly stated, it

had belonged to the faith of the Christian world at least since the time of Augustine. The church of Rome had held it through respect for the authority of that father ; and the early Reformers, Luther and Calvin especially, state it without reserve, and engage in its defence with the utmost warmth. The former declares, that good and evil are attributable to God alone ; man commits sin from the necessary inclination of his will, which is enslaved to wickedness, being predetermined to it by divine power ; and when he inclines to good, he only follows the irresistible impulse of grace, which pushes him onward like an inanimate body, his own agency having no share whatever in the movement. This is the doctrine, certainly, of men who have made entire submission of their reason to their faith ; and as such, it was accepted and defended by the Jansenists and their eloquent champion, Pascal. It is a part of that sacrifice which the penitent convert makes to the cause of religious truth, to humble the pride of his own intellect, and, in all the enthusiasm of self-abasement, to accept propositions as dark as these without question or reserve.

The Jesuits wished to impose no such terrible burden on their converts. Their object was to retain waverers in the Church, and to allure heretics again into its bosom, by imposing upon them no austerities of conduct, and no stumbling-blocks of doctrine. Lax and unscrupulous in the use of means, they preached a convenient system of morals, and an easy creed, to their converts. They aimed rather to justify sin than to commend holiness ; for they looked only to the external interests of the Church, which was already sure of the saints, and now stood in need, as they thought, of the services of the sinners. More subtle and ingenious than profound, they contrived intermediate systems, wherewith to reconcile their own loose doctrines with the oft repeated declarations of the Church and the teachings of the Fathers.

The treatise of the Spanish Jesuit, Molina, published in 1588, on the agreement between divine grace and human free-will, may be considered as the most general exposition of their belief on this thorny subject. According to this theory, the Deity foreknows not only every event which will actually take place, but also what would have happened under certain con-

ditions, that in fact are never fulfilled. The necessary aid of the Spirit is imparted to those only who would have made good use of the freedom of the will, if they had possessed it. Consequently, men act from necessity; but also act precisely as they would have done, had they been free. Divine grace is freely imparted to those who do not, indeed, merit it, but whose characters show a certain congruousness or fitness for its reception. This is the celebrated system of the "intermediate science," or the foresight of "contingent futures," as well as of actual events; and of "congruousness," instead of *merit*, or *arbitrary appointment*, which is made the law of distribution of the divine assistance. It is evidently an ingenious attempt to inculcate the doctrine of Pelagius, without expressly contradicting the words of Augustine. The doctrine of predestination is retained; but all events, so far as man is concerned, take place exactly as if they were altogether contingent, or dependent only on the free action of the human will. The just are irresistibly inclined to holiness by the action of divine grace; but if a different appointment of Providence had left them entirely at liberty, they would have followed precisely the same course.

In 1639, Jansenius, Bishop of Ypres, died just as he had completed his work called the "Augustinus," which had been the labor of his life, and which contained a kind of summary of the doctrines of Augustine respecting predestination and divine grace. It was published the year after his death; and, as it was a heavy and ill-written book, it would probably have attracted little notice, if accident had not rendered it the touchstone of dispute in the memorable controversy between the Port Royalists and the Jesuits. St. Cyran, the leader of the former party, had been the intimate friend of Jansenius, and now strongly recommended his work, as containing the whole secret of the doctrine of predestination. His associates, the pious and learned recluses of Port Royal des Champs, followed in his track, and defended the opinions of the Bishop of Ypres with so much ardor, that they were soon distinguished by the name of Jansenists. The Jesuits were enraged to find their own system of theology falling out of repute, while a dark shade was cast upon the character of their order by the

superior reputation of their antagonists for sanctity of life and purity of doctrine. Not daring to controvert openly the opinions of Augustine, they vehemently assailed the work of Jansenius, as containing dangerous and heretical doctrine. Their outcries and artifices would probably have had little effect, if the Jansenists had not unluckily incurred the hatred both of Richelieu and Mazarin; the former imprisoned St. Cyran at Vincennes, and the latter openly countenanced the machinations of the Jesuits. Emboldened by such aid, the Jesuits fulminated the most atrocious calumnies against the members of the hated sect, and left no stone unturned to effect their utter ruin. But their success depended upon maintaining the charge of heresy; for they had to do with men whose abilities and reputation were far greater than their own, and who acquired more public esteem from the very persecution under which they were suffering. Such adversaries as Arnould, Nicole, Saci, and Pascal were more to be dreaded than simple theologians. They were men of philosophical minds and high literary merit. They had acquired zealous and powerful friends throughout the kingdom, and even at the court, by their talents, their virtues, and the signal services which they had rendered to literature and science. But in that age and country, the single charge of heresy was enough to effect their destruction.

In 1649, Father Cornet, Syndic of the Faculty of the Sorbonne, drew up five propositions on the mysteries of divine grace, which he denounced, *as opinions drawn from the work of Jansenius* by Arnould and his followers. After a long contest at Rome, Innocent the Tenth finally decided that the propositions were heretical; and that one of them especially, which declared that Jesus Christ had not died for all men, was false, rash, and scandalous; and if understood to mean, that the Saviour had died for the elect alone, it was impious and blasphemous. But he said nothing about the question, whether these doctrines were actually contained in the "*Augustinus*." The Jansenists affirmed, that they could not be found there, and though they bowed with perfect submission to the authority of the Holy See, and admitted the five propositions to be heretical in the sense which was attached to them, they re-

fused to condemn the dogma of efficacious grace which is essential for an act of piety, or to reject the authority of St. Augustine, which had always been revered in the Church. They took a distinction between the pope's right to judge of points of doctrine, and his authority to settle *questions of fact*; the former they admitted to the fullest extent, while they boldly denied the latter. Questions of this class, they said, can be determined only by the senses. Pascal always speaks with entire reverence of the authority of the Church, as represented by the supreme pontiff, in *matters of faith*; but respecting *matters of fact*, he holds the following bold language: —

“It was in vain,” he says, addressing the Jesuits, “that you obtained a decree from Rome against Galileo, which condemned his opinion respecting the movement of the earth. *That* will never prove that it stands still; and if there is a series of constant observations to show that it turns on its axis, all the men in the world will never prevent it from turning, nor prevent themselves from turning along with it. Do not imagine, either, that the letters of Pope Zacharias, excommunicating St. Virgilius, because he maintained the existence of the antipodes, have annihilated this new world; and although he declared this opinion was a dangerous error, the King of Spain did well in believing Christopher Columbus, who had returned from this new world, rather than the opinion of the Pope, who had never been there; and the Church gained a great advantage thereby, as a knowledge of the gospel was thus imparted to many nations, who would otherwise have perished in their sins.”

All the theologians in France were now in arms upon the apparently simple question, whether the five propositions, admitted on all hands to be heretical, were really contained in the work of Jansenius, or not. Arnauld and his followers confidently asked to have them pointed out; the Jesuits accumulated all sorts of authorities, except the book itself, to prove that they were contained in it. The truth was, everybody knew that the substance, but not the identical words, of the five propositions were to be found in the book; but the Jesuits durst not cite the passages confirmatory of this view, for then their opponents would have obtained an easy triumph, by showing that Jansenius had used Augustine's own words, and Rome was by no means prepared to repudiate the

high authority of that Father, "the doctor of grace." The Jesuits charged their antagonists with upholding Calvinism, and were themselves accused, in turn, of favoring Pelagianism. It was a pitiable thing, as D'Alembert says, to see the time and talents of the ablest men in the kingdom wasted on fantastic and interminable discussions about free will and divine grace, and on the important question, whether five unintelligible propositions were contained in a stupid book which nobody ever thought of reading. Persecuted, imprisoned, exiled on account of these vain disputes, and continually occupied in defending such a futile cause, how many years in their lives have philosophy and letters to mourn over as utterly wasted !

Among those who combated for Jansenius, no one so much distinguished himself for zeal and vehemence as Arnauld. Inflexible, ardent, and indefatigable, he had all the qualities requisite for being the successful leader of a sect. In 1655, a priest of St. Sulpice refused absolution to the Duke de Liancourt, because he was a friend of the Port Royalists, and had allowed his grandchild to be a pupil in their seminary. Arnauld took fire at this insult, and published two very severe letters, commenting on the bigotry and injustice evinced by this act. Among other offensive things, he said he had read the work of Jansenius, and could not find the heretical propositions in it ; and that the gospel "offers us, in the case of St. Peter, the example of a just man, to whom the divine grace, without which nothing can be effected, was wanting, on an occasion when no one can say that he did not sin." For publishing these assertions, he was immediately arraigned before the Sorbonne as a contumacious heretic. The discussion excited great interest, for it was regarded as a decisive trial of strength between the two parties. The hall of the Sorbonne was crowded, as the Jesuits and their opponents mustered all their forces for the encounter ; and the former, especially, brought in so many mendicant monks, as to give occasion for a sarcastic remark by Pascal, that it was more easy for them to find monks than arguments. The condemnation of Arnauld was inevitable ; for the Jesuits had strengthened themselves by an alliance with the Dominicans and other orders, wrecks of the Middle Ages, whom a secret instinct brought together

as opponents of the new order of things. The minority was composed in great part of the secular clergy. Sentence was passed in January, 1656, when the two assertions cited above were not only condemned as heretical, but Arnauld himself was forever excluded from his seat in the faculty of theology.

The triumph of the Jesuits seemed complete ; but their joy was at once checked and turned into dismay by the sudden appearance in the opposite ranks of a new champion, far more formidable than any whom they had hitherto encountered. Just before sentence was passed, appeared the first of Pascal's "Provincial Letters," as they are usually called, though the more proper title is, "Letters written by Louis de Montalte to one of his Friends in the Country." The others, eighteen in number, were published successively, at intervals of several weeks' duration, for more than a year and a half. Never was more seasonable and effectual aid brought to the rescue of a sinking cause. These masterpieces of style and argument, of wit and eloquence, did more to ruin the name and the cause of the Jesuits, than all the discussions that had been urged in the schools of theology, and all the enemies they had provoked among the reigning powers of Europe. Eminently popular and intelligible in style, abounding with the happiest flashes of pleasantry and fancy, passing with ease and grace from the keenest ridicule to the loftiest invective, they were read and almost committed to memory by all classes of men, while the heavy and abusive answers to them passed unnoticed, and were soon forgotten. They provoked the unwilling praise even of Voltaire, who said that the earlier letters had more wit than the best comedies of Molière, and the later ones more sublimity than the finest compositions of Bossuet. The same excellent judge attributes to them the fixation of the French language, and says, that after the lapse of more than a century, not a word or phrase employed in them had become obsolete. The clearness and precision with which the points at issue are explained, and the tone of severe morality and fervent piety which pervades these admirable Letters, made them as persuasive and convincing as they were delightful. The Jesuits found themselves exposed to the ridicule and indignation of all Europe, in a publication destined to be as lasting

and as widely diffused as the language in which it was written. They had no writers among their number capable of averting or returning this terrible blow ; for it was aptly said of them, that at all times "their penknives were more to be dreaded than their pens." The Jesuit Annat remarked, that for an answer to the first fifteen Letters, he had only to repeat fifteen times over, that the writer of them was a Jansenist.

In the first three Letters, Pascal examines the points of dispute, which were involved in the trial of Arnauld. He exposes with great wit and severity the fraudulent alliance between the Jesuits and the Dominicans against the Jansenists, in which the two contracting parties covered up their fundamental differences of opinion by an abuse of language, using phrases which either had no meaning at all, or involved the grossest contradictions. The Dominicans had always maintained the doctrine of "efficacious grace" necessary for any good action, and that human liberty does not consist in indifference, but is compatible with a certain kind of necessity which springs from the irresistible power of divine grace. The Jesuits, who were followers of Molina, denied both these dogmas, and affirmed the existence of "sufficient grace," and "immediate power" to do good or to abstain from it, without any extraneous aid. Their allies employed the same phrases, but attached a different meaning to them, understanding thereby, that the powers spoken of were of no effect without the additional aid of the Spirit. They covenanted to use these technicalities without any reference to the sense which the Molinists attached to them, on condition that the Jesuits would not oblige them to explain their whole meaning, and would continue to declare that the doctrine of the Thomists was orthodox. Here was fine scope for the sarcastic commentary of Pascal on the dogma of "sufficient grace," which did not suffice for the performance of any pious act, and of "immediate power," which was of no avail except by the special assistance of the Deity. The irony with which he exposes these gross tergiversations is keen but tempered, and flashes out into eloquent indignation only at the close, when he comes to speak of the great purpose of this unholy compact, which was to effect the condemnation of the Jansenists.

By adopting the epistolary form of composition, which admits great freedom of transition and colloquial piquancy of style, and by throwing most of the argument into the garb of dialogue, Pascal contrived to render even this abstruse and perplexed controversy intelligible and pleasant to all classes of readers. He had less difficulty with the remainder of his task, which was to expose the false morality of the Jesuit casuists. From writers of established reputation among them, such as Escobar, Busenbaum, Bauny, and others, he has accumulated a long list of scandalous decisions, and has dwelt upon them with so much wit and severity, that he has rendered the very name of Jesuitism a synonyme for chicane, deception, and falsehood. It is a curious corroboration of this fact, that the popularity of his Letters in France introduced the word *escobar*, meaning "to prevaricate, or shuffle," into common use in the language. Pascal is often accused, though without reason, of treating the Jesuits unfairly, by holding the whole society responsible for the unauthorized doctrines of individual members. But he cites those works only which were of repute among them, which were adopted by them as guides in the confessional chair, and had passed through many editions. Escobar's treatise on Moral Theology, which Pascal quotes most frequently, went through forty editions, and more than fifty editions were published of the casuistical writings of Busenbaum. The Jesuits, also, were too proud and resolute, too firmly attached to each other and to the reputation of the society as a whole, to censure or repudiate works which they had once sanctioned. They yielded nothing, they disavowed nothing, but perished in the attempt to defend all. They accused their assailant of making unfair quotations, but did not deny that the writers whom he cited were authoritative. Pascal replied, that he had read Escobar twice through, and had not cited a passage from the other authors, without seeing it in the book, and carefully examining the context.

In truth, the ethical doctrines which he reprobates were interwoven with the fundamental principles of the society, and were a necessary consequence of the position which the Jesuits had assumed, and the mission which they had undertaken to accomplish. Their society was the last great instrument of

the old papal dominion. It came into the world too late for its work ; for the great schism had taken place, and no array of forces, however well disciplined, could prevent the fatal consequences of such a rent in the Church. They undertook to reverse the declaration of the Saviour, that the children of this world are, in their generation, wiser than the children of light. They borrowed the weapons of the devil to serve heaven with, and aimed to subjugate the world by conforming themselves to its spirit. When they could not face the nobler instincts of humanity, they made skilful and unhesitating use of all the baser appetites and passions, and became the ready tools and apologists of those who wished to compromise between conscience and convenience. They preached a mitigated doctrine of religion and morals, and thereby made themselves acceptable at court, and gained the private ear of the monarchs, of whom they were the favorite confessors. The Jesuits Annat, Le Tellier, and La Chaise governed France by granting absolution on easy terms to the sins of Louis the Fourteenth ; the gratitude of the king being proportioned to the number of his offences, and to the indulgence with which they were considered. Their precepts formed the monstrous anomaly of his religious character, — a compound of bigoted devotion and moral turpitude. But the Jesuits were too adroit to profit in their own persons by the laxity of the principles which they preached to others. Strange as it may seem, they were generally irreproachable, and even austere, in their private conduct. This contradiction occasioned the sarcastic remark, that they purchased heaven very dearly for themselves, but sold it at a very cheap bargain to their converts.

Acute and subtle in reasoning, they reduced their false morality to a system, and framed consistent rules for their own guidance in the practices of confession and absolution. They defined sin to be a wilful violation of the law of God, and measured its enormity by the penitent's consciousness of its true character, and by his free consent to its commission. Strong temptation and temporary forgetfulness of the divine command palliated the offence, by hiding its sinful nature from the view of the transgressor. Since hardly any one loves sin *as such*, or for its own sake, a sufficient mantle is hereby

provided to cover the greatest enormities. Habit, or even bad example, which increases the force of temptation, partially excuses the act; that which is not wantonly or gratuitously committed is not to be severely judged. Other grounds of pardon were also recognized. One of the most abominable of these is the doctrine of mental reservation, which allows one to make a promise coupled with a secret condition in his own mind, which he knows is not understood by the person to whom the promise is given. A man may say what is true in the meaning that he attaches to it, though he is aware that it will be interpreted in a different sense. Even perjury is allowable, if one only swears outwardly, without inwardly intending what he professes. Duelling is forbidden; but if a person is in danger of losing an office, or forfeiting the good opinion of his ruler, by refusing to engage in a duel, he is not to be condemned for fighting; for then he does not wish to violate the law, but only to preserve his honor or his station.

These were the detestable maxims of Jesuitical casuistry, maxims deliberately recommended in their books and taught from the confessional chair, which Pascal so happily exposed. By holding them up to public reprobation and contempt, he rendered no less signal service to morality and religion than to the almost desperate fortunes of the Port Royalists. But even the publication of the "Provincial Letters," though it covered the assailants with shame, would not, probably, have sufficed for the protection of the assailed, if a supposed miracle, perhaps the best accredited of its class in modern times, had not taken place, and created a popular belief, of which the Jansenists instantly availed themselves, that Heaven itself was interposing in behalf of the persecuted sect.

Pascal's niece, a girl about eleven years of age, the daughter of Madame Perier, resided as a pupil in the Port Royal nunnery. The poor child had been afflicted for more than three years with a *fistula lacrymalis*, in the corner of the left eye. It had affected the bones of the nose and palate, and frightfully disfigured her externally, one side of her face being entirely ulcerated. After the ablest physicians and surgeons of Paris had exhausted their skill upon the case without effect, they determined to make trial of the actual cautery, and

the day for this painful operation was fixed. Meanwhile, a collector of relics in the city, named M. de la Potterie, pretended to have gained possession of one of the thorns which had composed the crown that the soldiers platted and put upon our Saviour's head. As Voltaire remarks, by what means such an extraordinary relic was preserved, and transported from Jerusalem to the Faubourg St. Jacques, we are not informed. But the populace believed in the Holy Thorn, and the members of the several religious communities vied with each other in their eagerness to have it exhibited at their respective establishments. Among others, the Port Royal nuns requested to see it, and it was carried to them on the 24th of March, 1656. It was placed on a little altar within the grate of the choir, and a procession of the pupils and nuns marched by, singing appropriate hymns, and each in her turn kissing the holy relic. One of the instructors stood near, and could not help shuddering as she saw the disfigured little girl approach. "Recommend yourself to God, my child," she exclaimed, "and touch your diseased eye with the Holy Thorn." The command was obeyed, and the little girl instantly felt the assurance, as she afterwards declared, that she was healed. She told one of her young companions of the fact that night, and the next day it was made known to the nuns, who examined the eye, and found the cure was complete. There was no tumor, or exudation of matter, not even a scar.

Three or four days afterwards, Dalencé, one of the surgeons who were engaged to apply the hot iron, came to the house, and asked to see the patient. She was brought to him, but he did not recognize her, and said again that he wished to see the girl whose eye and cheek were ulcerated. "She now stands before you," was the reply. Amazed at such an announcement, he examined the little girl with great care, and could not find any trace of the disease. He then sent for his two associates, who repeated the examination, and declared that the patient was entirely cured. The report of this miracle created great sensation in Paris. Crowds flocked to Port Royal, to behold and admire the Holy Thorn. The queen mother deputed M. Felix, first surgeon of the king, who enjoyed a high reputation for probity and skill, to inquire into

the truth of the story. He questioned the nuns and the surgeons, drew up an account of the origin, progress, and end of the disease, attentively examined the girl, and at last declared, in a paper attested by his signature, that neither nature nor art had had any share in the cure, but that it was attributable to God alone. The cry was now universal, that divine power had interposed in behalf of the Jansenists, and their enemies were covered with confusion and dismay. The severe measures that had been instituted against the Port Royal society were instantly relaxed. The nuns were again allowed to receive their pupils, the illustrious recluses returned to the spot consecrated by their studies and devotions, and even Arnauld came forth from his hiding-place, and gave God thanks. Mademoiselle Perier lived seventy-five years after this event, without any return of the malady. She was still alive when the poet Racine drew up his narrative of the affair, from which we have taken this account.

The generation which has given credit to the wonders of animal magnetism has no right to laugh at the miracle of the Holy Thorn. Putting aside the inference respecting supernatural agency, the fact itself, attested by such men as Felix, Arnauld, Racine, and Pascal, who had full opportunity to satisfy themselves of the truth of the statement, cannot be lightly questioned. An almost desperate malady was suddenly cured under the circumstances related. Is it reasonable to suppose, that this event was produced by the special interposition of the Deity in behalf of the Jansenists? Thinking and judicious persons at the present day will answer this question, without hesitation, in the negative. They will admit the mysterious character of disease, and the remarkable results often produced by the working of occult natural causes, like the wonderful operations of sympathy, and the curative effects of a lively imagination and strong emotions. But rather than admit the interference of supernatural causes, they will accept the commentary of Voltaire, apart from the diabolical sneer with which it is uttered. "It is not very likely," says the old scoffer, "that God, who makes no miracles to impart a knowledge of our religion to nineteen twentieths of mankind, to whom this religion is either unknown or an object

of horror, did actually interrupt the order of nature for a little girl, in order to justify a few nuns, who pretended that Cornelius Jansen did not write about a dozen lines which were attributed to him, or that he wrote them with a different intention from that imputed to him by the Jesuits."

Neither the publication of the "Provincial Letters," nor the miracle of the Holy Thorn, sufficed to avert for a long period the persecution and final ruin of the sect of the Jansenists. But the respite thus procured lasted till the death of Pascal, who was thus spared the bitter anguish of beholding the defeat and dispersion of his beloved associates. His physical sufferings now became extreme, and, in 1658, they were increased by a long-continued toothache, which almost entirely deprived him of sleep. During the restless hours of the night, thus passed in an agony of pain, his mind reverted to his former mathematical pursuits, and, as a mere diversion, he meditated and solved his famous problems relative to the cycloid.

The mind of the religious enthusiast could not long be diverted by such labors from the more solemn topics which had now for years engrossed his attention. His devotional exercises became more and more absorbing, and the practices of penitence and self-denial, to which he submitted, were rapidly consuming his enfeebled powers of life. Devoting nearly his whole income to the service of the poor, he deprived himself of every luxury, and of most of the comforts of ordinary existence. In a small chamber, from which he had caused even the tapestry to be removed, lest it should gratify his eye, and where he would not allow himself the services of a single domestic, so long as his strength sufficed for making his own bed, he passed most of his time in prayer and the study of the Scriptures. To this cheerless and unfurnished apartment men distinguished in every walk of science and letters frequently resorted, to profit by the conversation of the greatest genius of his country, and perhaps of his age. He talked with vivacity and wit, as might be expected from the author of the "Provincial Letters," and displayed without effort or reserve the stores of his information and the vast range of his intellect. Human nature is weak, and he could

not but be gratified and flattered to find his conversation so acceptable to others, and to observe the superiority of his spirit to theirs. But this pleasure was a weakness, it was even a sin, in the eyes of the pious devotee. It was to be mortified, with the other enticements of the flesh, and to be kept in subjection to the love of God and the hope of heaven. He wore a girdle, with sharp points on the inside, next to his flesh, and when he felt any movement of vanity or extraordinary pleasure in conversation, he pressed the iron torture more closely to his side, that physical pain might remind him of his frailty and his duty. Pitiable and perverted, indeed, though fervent and pure in him, was the religious faith which led to the infliction of such gratuitous suffering.

In strict conformity to his principle, that it was necessary to renounce all the pleasures of this world, he tried to stifle even the ordinary impulses of natural affection, and to preserve a cold and rigid exterior to his nearest friends, even when his heart was overflowing with kindness and love. His kindness was not confined to those with whom he was connected by natural ties; on the sick and destitute stranger his bounty was lavished with all the heroism of benevolence. During his last illness, he had given a lodging in his house to a poor man and his son, from whom he received no return but gratitude. The son was attacked with the small-pox, and could not be carried to another habitation without danger. Pascal's feeble condition required the constant care of his sister; and as her children had not had this disease, he desired to save them from the risk of receiving the infection through their mother's attendance upon himself. Under these circumstances, weak and suffering as he was, he gave up his own home to the sick boy, and went to reside at the house of his sister.

Except his elder sister, Madame Perier, he was now alone in the world. His father had died in 1651, and the loss had made a deep impression upon him; for the similarity of their characters and pursuits had drawn them together in a closer and more affectionate intimacy than that which usually exists between parent and child. A letter which he wrote on this occasion is preserved among his works, and shows a spirit of

the most exalted piety, without a trace of cant or affected feeling. Ten years afterwards, he lost Jacqueline also, the infant actress, whose graceful pleading had redeemed their father from exile, and whose later years had been entirely consecrated to God's service in the nunnery at Port Royal. She had become sub-prioress in this institution, and her death was hastened by perplexity and grief, after the machinations of the Jesuits had at length caused the inexorable decree to go forth, that all the Jansenist nuns should subscribe the formulary, which contained an explicit renunciation of the opinions they had so long cherished. Strange effect, that a perverted faith and ecclesiastical persecution should cause a woman to die of grief, because required to sign a declaration, that the five propositions in their heretical sense were actually written in the book of Jansenius! The historian of the Port Royalists records the remark which she made on her death-bed, that she was "the first victim of the formulary." Pascal was tenderly attached to her, and when informed of her death, exclaimed with a sigh, "God grant that my end may be like hers!"

His own life was now rapidly drawing to a close, though one work still remained for him to accomplish. It was meet that a spirit touched to so fine issues should not leave the world without bequeathing to it a more valuable and befitting memorial of united genius and piety than was contained in the Letters respecting the controversy with the Jesuits. For three years before his death, the progress of his disease, and the paroxysms of pain that he endured, left only infrequent and short intervals during which his mind was capable of effort; but these he zealously employed in making preparations for a great work on the philosophy of human nature and the proofs of the Christian religion. On these subjects he wrote down detached thoughts, as they occurred to him, upon loose scraps of paper; and when he was incapable of holding the pen for himself, a faithful domestic sat by his bedside, and wrote from his dictation. In this way there was accumulated a mass of unconnected hints and aphorisms, which he was not allowed to arrange and complete.

In the summer of 1662, another painful disease was added

to those which had already undermined his constitution and brought him to the brink of the grave. When this malady was at its height, frequently depriving him of consciousness, he was removed to his sister's house for the reason already mentioned. There he tranquilly occupied himself in preparing for death. He made his will, leaving large sums to the poor; and would have bequeathed to them his whole property, if the condition of his sister's children, who were not rich, had not required his aid. As he could not do more for the sick and the destitute, he wished at least to die among them, and he eagerly desired his friends to carry him to the Hospital for the Incurables. They could dissuade him from executing this intention only by promising, that, if he recovered, he should be free to devote his whole life and property to the service of the poor. In the beginning of August, as his end was obviously nigh at hand, he called with great earnestness for the last services of the Church. This request was at length granted, after a fainting-fit had occurred, which lasted so long that his friends believed he was dead. But he recovered sufficiently to raise himself on the couch, and receive the sacrament with marks of resignation and deep feeling, which drew tears from all the beholders. A moment afterwards, he fell into convulsions, which closed the scene. He died on the 29th of August, 1662, aged thirty-nine years. In the church of St. Etienne du Mont, at Paris, a marble tablet on one of the pillars near the great altar, with a simple inscription, informs the reader that he is standing upon the tomb of Pascal.

The loose hints and unconnected fragments, which he had prepared for his great work on the proofs of the Christian religion, were first collected and published in 1670, under the title of "*Thoughts of M. Pascal upon Religion and some other Topics.*" They were left at his death in a state of utter confusion, and in the first edition, many of them were suppressed, and the others were printed in a very defective arrangement, so that portions of the work appeared very obscure. Bossut superintended a complete edition of them in 1779, having diligently examined the original manuscripts, and perfected the classification which was commenced by Condorcet.

A few years before, Voltaire had published an edition, with notes, such as might be expected from one of his character and principles. He hated Pascal's creed, and called him "a sublime misanthrope"; but according to his own confession, he had studied the "Provincial Letters" and the "Thoughts," till he almost knew them by heart. We read them now as general aphorisms, which apparently have little immediate connection with each other, though the leading purpose of the writer is sufficiently obvious, and they all seem to converge towards the great questions respecting human nature and destiny. The fine discernment of the writer, the scientific exactness and condensation of the style, are the more apparent from the broken and fragmentary condition of the "Thoughts." There is a want of roundness and flow in the composition, but it is admirable for terseness and epigrammatic point. Sometimes he is hurried away by the love of antithesis, and the expression is often so elliptical as to be obscure. But the original and striking character of the reflections, the keen analysis of motives, the vivacity and energy of the style, the rapid and forcible progress of the arguments, and the singular richness and novelty of the illustrations, command the reader's attention through all these disadvantages. A more impressive and eloquent work does not exist in the French language.

The "Thoughts" are deeply tinged with the despondency of the writer's mind, and with the peculiarities of his religious opinions. He seems to triumph in exposing the weakness and imperfection of human nature, and the vanity of human pursuits. The corruption of the heart and the weakness of the intellect are the themes on which he most willingly expatiates, using at times bitter sarcasm and the loftiest invective. "His melancholy genius," says Hallam, "plays in wild and rapid flashes, like the lightning round the scathed oak, about the fallen greatness of man." But it is not with the mocking spirit of a satirist that he dilates upon the fallen and wretched condition of our race. In his eyes, man is weak and degraded, but not contemptible; his view is fixed as much upon the heights from which he has fallen, as upon the abyss into which he is plunged. His magnificent lamentations are uttered in the spirit of Jeremiah weeping over the sins of his nation,

and pointing out the ruin with which it is menaced. He seeks to humble only that he may exalt, to point out the frailty and wretchedness of man's condition in this world, only that his attention may be diverted from it, and fixed upon the unutterable splendors of the life to come. "Man is so great," he says, "that his grandeur appears from the knowledge he has of his own misery. A tree knows not that it is wretched. True, it is sad to know that we are miserable; but it is also a mark of greatness to be aware of this misery. Thus all the wretchedness of man proves his nobleness. It is the unhappiness of a great lord, the misery of a dethroned king." The misery of our present condition is aggravated by the consciousness that we have fallen from a state of innocence and peace. Like the poet, Pascal finds that there is no greater grief than the recollection of happiness formerly enjoyed. "Who, but a discrowned monarch," he asks, "is grieved that he does not possess a throne? Who thinks himself unhappy, because he has but one mouth? And who is not unhappy, if he has but one eye? No one ever thought of sorrowing, because he has not three eyes; but he is inconsolable, if he has but one."

The chief purpose of the work is to show man's need of religion, in order both to explain the enigma of his present state, and to console him in the midst of privation and suffering. The argument is not addressed to the understanding, but to the feelings; and its aim is rather to persuade than to convince. "The heart has its reasons," he says, "which the intellect knoweth not of; we perceive this truth in a thousand things. It is the heart, and not the reason, which finds out God; and this is perfect faith, God made known to the heart." Metaphysical proofs of a God, he continues, are so far removed from the ordinary sphere of human reason, and so abstruse, that they make little impression; if serviceable to a few, they will be so only so long as the demonstration is before them; an hour afterwards, they will fear they have been deceived. Cicero expresses the same thought still more clearly. *Nescio quo modo, dum lego, assentior; cum posui librum et mecum ipse cæpi cogitare, assensio omnis illa elabitur.* Pascal argues further, that this kind of proof can lead only to a

speculative knowledge of God, and to know him in this manner is nearly as bad as to be entirely ignorant of him. In order to know God like a Christian, man must become acquainted with the misery of his own condition, his unworthiness, and his need of a mediator. These truths must not be separated, or they will become not only useless, but injurious. "To know God, without being aware of our own misery, gives birth to pride; to be conscious of our own wretchedness, without any knowledge of Jesus Christ, leads to despair. The knowledge of the Saviour exempts us both from pride and despair; for in him we find God, and the secret of our miserable state and the means of rising above it." We must become acquainted with human things, he adds, before loving them; but we must love divine things, in order to know them.

It is obvious, that Pascal's intention was to create the state of mind which is necessary for the due reception of religious truth, before offering any arguments in direct support of that truth. He seeks first to humble the pride of the intellect, to point out the enigmas and inconsistencies of our nature, its greatness and feebleness, its pride and abjectness, to convince mankind of their degraded and corrupt condition, and then to show, in the sublime mysteries of Christian faith, at once an explanation of their fallen state, a solace for their sufferings in this world, and a glorious hereafter. "Every one," he says, "must take his side, and range himself in the ranks either of Pyrrhonism or dogmatism; for he who thinks to remain neuter will be a Pyrrhonist *par excellence*; this neutrality is the very essence of Pyrrhonism." But the difficulty of making the choice is great; for "reason confutes the dogmatists, and nature confounds the sceptics; we have an incapacity of demonstration, which the former cannot overcome; we have a conception of truth, which the latter cannot disturb." Thus bandied about between opposing difficulties, constantly urged to continue a pursuit which can never be successful, man is disappointed, helpless, and miserable, unless light come to him from heaven, and an almighty arm be stretched out for his aid.

"Man," he observes, "has a secret instinct, that leads him to seek diversion and employment from without; this springs from the con-

sciousness of his continual misery. He has another secret impulse, remaining from the grandeur of his primitive state, which teaches him that happiness can exist only in repose. And from these two contrary instincts, there arises in him an obscure idea, concealed in the depths of the soul, that prompts him to seek repose through agitation, and even to fancy that the contentment he does not enjoy will yet be found, if by struggling still a little longer he can open the door to rest. Thus passes his whole life. He seeks for repose by contending against certain obstacles ; and when he has surmounted them, repose itself becomes insupportable."

The book is so incomplete and fragmentary, that it is very difficult to select passages which will give a fair view of the drift of his remarks, or the general characteristics of his manner. His language, also, from its remarkable compression and terseness, hardly admits of being translated without losing most of its vigor. But the following extract may give some idea of his power of thought and utterance.

"Let not man confine his view simply to the objects which surround him ; let him contemplate all nature in its lofty and entire majesty ; let him consider the great orb set like an ever-burning beacon to illumine the universe ; let the earth appear to him like a point, in comparison with the vast circle which this luminary seems to describe ; let him wonder that this vast orbit is itself but a delicate point, when compared with that of the stars which roll in the firmament. If our sight stops here, the imagination passes beyond. The intellect ceases to conceive, before nature fails to supply. All that we see of the universe is but a spot imperceptibly small in the ample bosom of nature. No idea approaches the extent of infinite space. In vain would we dilate our conceptions ; we image to ourselves only atoms, in comparison with the reality. It is an infinite sphere, of which the centre is everywhere, and the circumference nowhere. And it is one of the most striking marks of the omnipotence of God, that our imagination is lost in this thought.

"And now, returning to himself, let him consider what man is, in comparison with all that is ; let him look upon himself as lost in this by-corner of nature ; and from the appearance of this little dungeon in which he is lodged — this visible world — let him learn to estimate himself, and the cities and kingdoms of this earth, at their true value. . . . In truth, what is man in the midst of nature ? A cipher in respect to the infinite, and all in comparison with nonentity, — a mean

betwixt nothing and all. He is infinitely far removed from the two extremes; and his being is not less distant from the nothingness whence he was drawn, than from the infinite in which he is engulfed. In the order of intelligent things, his intellect holds the same rank that his body does in the expanse of nature; all that he can do is to discern some phenomena from the midst of things, in eternal despair of ever knowing their beginning or their end. All things came from nothing, and extend even to the infinite. Who can follow this astonishing progress? The author of these marvels understands them; to all others they are unintelligible. We burn with desire to know everything, and to build a tower which shall rise even to the heavens. But our whole edifice cracks, and the earth opens beneath us even to the abyss."

With this striking picture of the insignificance and weakness of man, contrast the following sublime reflection upon his grandeur as a thinking soul. "Man is the feeblest branch of nature, but it is a branch that thinks. It is not necessary that the whole universe should rise in arms to crush him. A vapor, a drop of water, is enough to kill him. But if the universe should crush him, he would still be nobler than that which causes his death; for he knows that he is dying, and the universe knows nothing of its power over him." It is in view of contrarieties like these, that Pascal exclaims, "What an enigma, then, is man! What a strange, chaotic, and contradictory being! Judge of all things, feeble earthworm, depository of the truth, mass of uncertainty, glory and butt of the universe, — if he boasts himself, I abase him; if he humbles himself, I make my boast of him; and I always contradict him, till he comprehends that he is an incomprehensible monster."

The great doctrine of the book, to which most of the preceding illustrations are subservient, is the duty of the entire submission of human reason in matters of faith. To this precept the writer recurs again and again, and seems never to be weary of inculcating it. Unquestionably it is a great truth, but a most perilous one to define and apply. He admits, that "reason alone can tell where reason ends." The humility of his spirit in enforcing this dogma appears the more remarkable, when contrasted with his singular boldness and indepen-

dence of thought upon all other topics. On all matters of scientific inquiry, his resistance to the weight of authority, and his assertion of the right of private judgment, is one of the most striking traits of his genius. "Truth," he says, "is the most ancient of all things, — older than all the opinions that have been had of it; whatever aspect antiquity may present, truth, however lately discovered, ought always to have the advantage over it; it is gross ignorance to imagine that nature began to be, when it began to be known." His success in refuting the old scholastic doctrine of nature's abhorrence of a vacuum probably strengthened this independence of mind, and led him to dwell upon it with more earnestness. His fine remark, in speaking of the weight due to authority, that the ancients after all were only the children among mankind, has been so often cited without giving him credit for it, that it is worth while to quote it in his own words, though with considerable abridgment.

"Animals make no progress. The hexagonal cells of bees were as accurately measured and finished a thousand years ago, as they are at the present day. It is not so with man, who is born for eternity. He is ignorant at first, but constantly acquires knowledge, not only from his own experience, but from the accumulated wisdom of his predecessors. Men are now very nearly in the same condition that the ancient philosophers would have arrived at, if they could have lived till our times, constantly adding to their knowledge what they might have acquired by study during so many centuries. All the generations of men during so many ages ought to be considered only as one man, who lives forever, and is continually learning. Hence, how improper it is to respect philosophers for their antiquity! For as old age is the period farthest removed from infancy, who does not see, that the old age of this universal man ought not to be sought for in the years nearest to his birth, but in those most remote from it? Those whom we call the ancients were truly young in all things, and formed the infancy of mankind. As we have joined to their knowledge the experience of the ages which came after them, it is in us that this antiquity is to be found which we are wont to revere in others."

As Lord Bacon says nearly the same thing, it is not unlikely that Pascal derived the first hint of it from the writings

of the English philosopher ; which is a further proof of what we have already had reason to suspect, that he had profited by these writings in the earlier part of his career.

Only this submissive and child-like spirit in religious inquiry could have retained the otherwise bold and inquisitive intellect of Pascal in bondage to the Romish Church. This frame of mind may be partially accounted for by his experience in the Jansenist controversy, which had led him to put great stress upon the distinction between the *droit* and the *fait*, between questions of doctrine and matters of fact. He was thus induced blindly to accept whatever was taught by the Fathers and the Councils, while he opposed with unflinching skepticism the doctrines of the Scholastic philosophy. He refers frequently to the Catholic doctrine respecting the eucharist, and the Calvinistic one of the transmission of sin, in illustration of his favorite theme, the incapacity of human nature to comprehend religious truth. The following acute remark relates to the practice of auricular confession.

“Is it not true, that we hate the truth and those who utter it to us, while we love those who practise pleasant deceptions upon us, and wish to be esteemed by them as different beings from what we are? Here is a proof of it which shocks me. The Catholic religion does not require one to make known his sins indifferently to all the world ; it permits him to conceal them from the view of other men in general ; but it makes an exception in favor of one person, to whom it commands him to disclose the very depths of his heart, and to appear in his sight as he really is. There is but one man in the world whom it commands us thus to disabuse ; and it binds him to inviolable secrecy, so that this knowledge is in him as if it did not exist at all. Can we imagine anything more charitable and mild? And yet, the corruption of man is such, that he finds even this law too severe, and it is one of the principal reasons which have caused a great part of Europe to revolt against the Church. How unjust and unreasonable is the heart of man, to object to doing to one person what it would be only fair to do to all men! For is it just that we should deceive them? There are different degrees in this aversion to the truth ; but it may be said to exist in all in some measure ; for it is inseparable from self-love.”

This is very ingenious, but it is sophistical. We do not love

nor practise deception *as such*, or for its own sake. We detest the flatterer, and cast him off as soon as his falsehood is exposed. We are pleased, indeed, when we learn that others entertain a good opinion of us; but this is only a mark of the kindly sympathy which binds societies of men together. The avowal, whether true or false, of this opinion is a matter of no substantive importance; it is the fact alone in which we are interested; if thoroughly convinced of the existence of this opinion, we could very well dispense with the expression of it. We are reluctant to expose our faults, because unwilling to fall in the estimation of our friends, or to afford matter of triumph to our enemies; but concealment is not prized for its own sake, nor from any wish to deceive. We fear ungenerous and harsh constructions; if the fault could be made known with all its palliating circumstances, and thus seem as excusable in the eyes of others as it appears in our own, its disclosure would be a matter of comparative indifference. Some feelings, also, though perfectly innocent, are sensitive, and fear the light; we conceal them, certainly without any consciousness of wrong, or any possibility of injurious deception.

We have no space to carry any farther our analysis of this remarkable book, which such competent judges as Dr. Arnold have ranked among the "greatest masterpieces of human genius." Our remarks, desultory and incomplete as the work itself, must end with the citation of a few more of the aphorisms, though much of their spirit necessarily escapes in a translation. Speaking of the Jewish Scriptures, Pascal observes:—

"I find no reason to doubt the truth of a book which contains all these things; for there is a great difference between a book which a person makes and throws among a people, and a book which of itself makes a people. We cannot doubt that the book is at least as old as the people."

"Between us and heaven, hell or annihilation, there is only human life, which of all things in the world is the frailest."

"When we would show any one that he is mistaken, our best course is to observe on what side he considers the subject; for his view of it is generally right on this side, and admit to him, that he is right so far. He will be satisfied with this acknowledgment, that he was not

wrong in his judgment, but only inadvertent in not looking at the whole of the case. For we are less ashamed of not having seen the whole, than of being deceived in what we do see ; and this may perhaps arise from an impossibility of the understanding being deceived in what it does see, just as the perceptions of the senses, as such, must always be true."

"Nature has its perfections, to show that it is the image of God, and its faults, to show that it is only his image."

"Unbelievers are the most credulous persons in the world ; they believe the miracles of Vespasian [and of animal magnetism], in order not to believe those of Moses."

"The multitude which cannot be reduced to unity is confusion ; and the unity which does not depend on multitude is tyranny."

"The synagogue did not perish, because it was a type of the church ; but as it was only a type, it fell into servitude. The symbol existed until the reality appeared, in order that the church might always be visible, either in the image which foreshadowed it, or in reality."

"What can be more ridiculous and vain than the doctrine of the Stoics, and what more baseless than their whole reasoning ? They conclude, that what a man can sometimes do, he can always do ; and because the desire of glory enables those who are actuated by it to accomplish something noble, that others will be able to do as much. Theirs are the convulsive efforts of a man in a fever, which one in health cannot imitate."

"I cannot pardon Descartes. It was his ambition, in his system of philosophy, to be able to do without God altogether ; but he was obliged to suppose the Deity gave the world a fillip in order to set it in motion ; after which there was nothing more for him to do."

"We are not to suppose that Plato and Aristotle always wore their long robes, and appeared as dignified and serious personages. They were good-natured persons, who enjoyed a laugh with their friends, like the rest of the world ; and when they wrote upon legislation and politics, it was only by way of enjoying themselves and seeking diversion. This was the least philosophical and the least serious portion of their lives ; the most philosophical part of it was when they lived most simply and tranquilly."

"The virtue of a man ought not to be measured by his great efforts, but by his ordinary conduct."

"If we dreamed every night the same thing, it would affect us as much perhaps as the objects which we see every day. If an artisan was sure of dreaming every night, for twelve hours, that he was a

king, I believe he would be nearly as happy as a king who should dream every night, for twelve hours, that he was an artisan. If we dreamed every night that we were pursued by enemies and harassed by terrible phantoms, while we passed every day in various occupations, we should suffer nearly as much as if the dream were true, and should dread going to sleep, as we now dread to wake, from the fear of really falling into such misfortunes. In truth, these dreams would cause nearly as much suffering as the reality. But because dreams are very various and unlike each other, what we see in them affects us much less than what we see in our waking hours, on account of the continuity of events when we are awake; this continuity, however, is not so fixed and constant as to be wholly free from change, though the scenes shift less suddenly and less frequently. Life is only a rather more constant dream."

ESSAYS AND REVIEWS:

THE OXFORD CLERGYMEN'S ATTACK ON CHRISTIANITY.

FROM THE NORTH AMERICAN REVIEW FOR JANUARY, 1861.

THE publication of "Essays and Reviews" is a strange and even a startling event. But it is startling not so much from the nature of its contents, as from the character and position of its authors. Certainly there is nothing new or deserving of especial notice, either in a studied attack upon the authority and truthfulness of large portions of the Bible, or in a scornful depreciation of the Evidences, and a denial of many of the fundamental doctrines, of Christianity; or in a bold and dogmatic assertion that any supernatural event whatever, and therefore any special and immediate revelation of God to man, is, in the present state of science, essentially incredible, whatever may be the amount of apparent testimony in its favor. All this has been dinned into our ears so often that we have ceased to wonder, though not to grieve, at its repetition. And the argument has as little originality as the doctrine. There is little or nothing in this volume which is not already familiar to those who are acquainted with the writings of the English Deists of the last century, with the speculations of Hume and the later German metaphysicians, and with the doctrines of those physicists, belonging to the school of Comte, who have attempted to limit the study of nature to an observation of the laws of phenomena, rigidly excluding all inquiries into their efficient or final cause as unscientific and useless.

But if not entirely unprepared to hear these sceptical arguments and sceptical conclusions repeated by clergymen, we did not expect their revival at the seat of orthodoxy by dignitaries of the English Church and officials of high standing in the University of Oxford. The title-page, with studied brevity

and reticence, contains only these words, "Essays and Reviews," with the usual imprint by the publisher. But from the table of contents and from other sources, we learn that, of the seven writers in the volume, two are Professors at Oxford, and three others are, or have recently been Fellows and Tutors at that ancient University, one of them being a chaplain in ordinary to the Queen and a successor of Dr. Arnold as headmaster of Rugby School. A sixth, Dr. Williams, now vice-principal and Professor at St. David's College, was recently Fellow and Tutor of King's College at Cambridge. Of the seventh, Mr. Goodwin, we know nothing except that he is a graduate of Cambridge, and was recently a Fellow in one of its colleges. All but one are clergymen, and most of them hold benefices in the English Church. [One of them, Dr. Temple, is now (1880) a bishop in the English Church.] A prefatory note contains the usual caution in the case of a joint publication, that the authors "are responsible for their respective articles only," and that they have written without concert or comparison. No one will desire to push the responsibility beyond the limit here indicated; but in this instance, as in the more famous one of the "Tracts for the Times," those who have joined in writing a series of articles upon the same general subject, to be published together as one work, must be presumed to harmonize with one another, in the main, in their opinions and purposes. This presumption is borne out by the contents of the several essays when examined separately. Each has its peculiarities, but there is a general agreement among them in the purport and tendency of the doctrines which they teach. In short, the book must be regarded as the manifesto of a new school in philosophy and theology, which has sprung up chiefly at Oxford, though it finds adherents at Cambridge also, and which probably owes its origin to a reaction against the famous "Tracts," as it certainly rivals them in hardihood.

We gladly admit, in the first place, that the tone of these Essays is, generally, unexceptionable in point of taste and decorum. The doctrines which they controvert are treated with decency and respect. Scoffs and jeers are left for those who relish such condiments of controversy, and who cannot respect the feelings, the honest prejudices, it may be, of their oppo-

nents. At any rate, if the weapons of ridicule and sarcasm are ever wielded, they are directed where their use is legitimate, — not against the main opinions which are assailed, but against the weak or sophistical arguments, or what are supposed to be such, that have been adduced in their support. We find once in a while a gibe at the Evidences of Christianity, but never at Christianity itself. This decorum we hope to imitate, by speaking with perfect freedom of the doctrines maintained in this volume, but with entire respect of its authors. Their conduct even in continuing to wear the robes and perform the functions of English clergymen demands to be treated with leniency; the attempt to play the casuist upon such a point is one that carries its own punishment along with it, and needs no sharp reproof from others.

One of the evils inseparable from the institution of the Christian ministry as a distinct profession, and from the course of studies which is the necessary intellectual preparation for it, is, that it sometimes leads the neophyte to sceptical opinions. Especially is this the case in England, where the Church, viewed in its relations to the state, in its hierarchy, its system of patronage, and its large endowments, is a great political institution, which maintains its Holy Orders to some extent as indelible, which consequently prohibits those who enter its service from casting any look behind them, but which is still bound to uphold at least the appearance of free thought and inquiry as one of the leading principles of Protestantism, and as a part of the inalienable birthright of Englishmen. It is a part of the original perversity, if not of human nature in general, at least of many sensitive and delicate minds, that they no sooner see the great doors close behind them which cut off all retreat, than they are immediately tempted to quarrel with the discipline and arrangements of their new home. Egress is still possible, it is true, but only at a sacrifice of immediate welfare and long-cherished purposes, from which they shrink even with greater dislike than from the obligatory performance of their newly imposed functions. The teachings of their new mother become distasteful just as soon as she claims authority over them, and a right to determine their opinions and dispose of their time. If an earnest and heartfelt attachment to the

peculiar duties of their new position had always preceded the assumption of them, such mental revolt would be less frequent and less serious. But the Church offers a profession, a career in life, a subsistence, such as is offered by any of the other vocations to which educated men may turn; and thus men are tempted into it from a mixture of motives, just as many enter into matrimony, with a hope that love will come at least after the indissoluble knot is tied. Of course, this hope is not always realized; and then they quarrel with the knot rather than with the spouse.

To minds of such a cast, and in such a state, the study of theology is apt to be rather injurious than beneficial. What they most need is a discipline of the heart and the affections, rather than of the intellect. The mind is in a morbid state of revolt against the new duties that have been laid upon it, and seeks occasion to question and controvert the authority that imposes them. Inquiry is begun with a bias in the wrong direction, with a predisposition rather to find or invent difficulties than to clear them away, and thus to justify the complaining and rebellious spirit in which the student commences his work. Too many enter upon a course of theological study in such a temper that scepticism is already with them a foregone conclusion. The inquiry is made to turn on some of the dark questions of metaphysics, or on the quibbles which may be raised against any point of history, whether sacred or profane, by those who will accept no proof but that of demonstration. The study of the Evidences is peevishly rejected, because the mind is really incapable of reasoning, and closed against conviction. The only effective medicine for such a perverted state of the intellect would be, to give up the study of theology altogether, or to postpone it till, by the practical exercises and duties of religion, the heart may be won back to the sacred profession, and the labor be resumed only when it has become a labor of love. To the theological student, far more frequently than to any other person, the question respecting any form of doctrine seems to concern its truth alone. He asks only, "Is it true?" Others ask, "Is it fitting, instructive, consolatory, or elevating? Does it harmonize with my conscience in improving me of sin, or does it aid me in striving after holi-

ness?" He judges the doctrine by its antecedent evidence, as a matter of science; they try it by its results, as a matter of life and conduct. The worst result of the inquiry, in the former case, is scepticism; in the other, it is only neglect or indifference.

Of course, we do not mean that the systematic study of theology is generally harmful, but only that it will do more harm than good to those who have previously quarrelled with their religious profession. However it may be accounted for, the fact itself hardly admits of question, that, in proportion to their respective numbers, there is more scepticism among the clergy than among the laity. Hence, the ministrations of the Church do not effect half as much good as they would otherwise accomplish in the world at large. Affliction, anxiety, or remorse stirs and softens the religious affections, and begets a craving for sympathy, counsel, and support. The most important office of a Christian pastor is, to minister to minds in such a state. But what aid or consolation can he bring, whose own faith has been previously shaken or perverted? How can he offer or counsel prayer, who does not believe in its efficacy, or thinks that its power is exhausted upon the mind of the utterer, and that it is not heard and answered in heaven? How can he urge resignation under calamity as a duty of submission to God, when he believes in the fatalistic succession of all events under physical laws, and consequently rejects, as essentially incredible, the doctrine of Divine interposition? How can he aid in robbing death of its terrors, who does not believe in immortality, except in some incomprehensible phase of the reunion of the finite with the infinite, or who maintains that eternity *hereafter* means only eternity *here and now*? Yet such are the cold and vague speculations which the clerical writers of this book would substitute for the vital doctrines of Christianity. Among the other criteria of theological opinions, why did they never think of applying this practical test, — How will my version of the dogma work as a means of elevating the faith and purifying the lives of the people of my own parish?

The first Essay in the volume, on "The Education of the World," is one of those fanciful exercises of the intellect

which consist rather in playing with a metaphor, or hunting a similitude to death, than in the sober and conscientious evolution of a truth.¹ All those points in regard to which the parallel holds are brought into prominent and even exaggerated relief, while those on which it fails, generally more numerous, are either explained away to the perversion of the truth, or are kept altogether out of sight. Such speculations are seldom more than half true ; and half-truths, because more insidious, do greater harm than whole falsehoods. Dr. Temple, borrowing his whole doctrine from Lessing, begins by assuming, that, as each generation of men inherits the knowledge, and enters into possession of the works, of its predecessor, the whole human race is in fact “a colossal man, whose life reaches from the creation to the day of judgment.” This is a very pretty idea to play with, and the fancy is ingeniously carried out with a careful selection of such facts of history, *and such only*, as can, with a little paring and shaping, be dovetailed into it. The successive generations of men “are days in this man’s life ;” the discoveries and inventions of all time “are his works ;” the successive states of society “are his manners ;” and, what is most important, “*the creeds and doctrines*, the opinions and principles of the successive ages, are his thoughts.” Sometimes, the writer’s eagerness to carry out the similitude tempts him to make rather hazardous assertions, as when he tells us that this hypothetical aggregate man “grows in knowledge, in self-control, *in visible size, just as we do.*” We had supposed that the facts tended rather to support the popular belief, which the poets also share, that the generations of men degenerate in strength and stature. The Head-Master of Rugby School, of course, remembers the husbandman, who, as Virgil predicts, —

“Aut gravibus rastris galeas pulsabit inanes,
Grandiaque effossis mirabitur ossa sepulchris.”

Modern Frenchmen appear remarkably puny when we read about the tall and athletic Gauls and Franks from whom they

¹ It ought in fairness to be mentioned, that Dr. Frederick Temple, the author of this Essay, when he was appointed Bishop of Exeter, in 1869, though he did not expressly renounce and recant the opinions here maintained, did withdraw the Essay from publication, on the ground, so far as I remember, that it was liable to be misunderstood and to give offence.

are descended ; and soldiers of our own day, encased in the bulky and weighty armor worn by mediæval knights, would be about as efficient on the battle-field or the parade-ground as Goose Gibbie was, when half smothered and blinded in the big helmet.

Following out the same train of fanciful speculation, we learn that each of the great races that have inhabited the earth had a distinct part to play in the education of the "monster-man," who acknowledges Dr. Temple as his Frankenstein. "Thus, the Hebrews may be said to have disciplined the human conscience, Rome the human will, Greece the reason and taste, Asia the spiritual imagination." Has Dr. Temple forgotten Egypt? or does he consider the invention of the art of writing a step of no importance in the education of his composite man? Greece certainly imported an alphabet, and the rudiments both of her art and her philosophy, from the East. No account is here taken of the Goths, and other barbaric races that issued from the hive of the populous North, though perhaps the character of the modern European owes more to them than to Greek art or Roman polity. A ripe scholar may be excused for forgetting, or contemptuously passing over, about three fourths of the human race, who are now, in almost every respect, precisely what they would have been if Greece and Italy had subsided, as the geologists say, into the Mediterranean three thousand years ago. China is a considerable nation, at least in point of numbers ; while the Buddhists form no inconsiderable fraction of the colossal modern man. Even Africa must be taken into account, unless our author is one of those speculatists who maintain that a negro is not a man. As for the Hebrews disciplining the conscience of the nations farther East, one of the writers in this very volume maintains that the Jews were indebted to the Babylonians even for the doctrine of the immortality of the soul.

But it would be a waste of time and labor to pick utterly to pieces a slight essay, which seems to have been prepared as an exercise of the fancy, rather than of the intellect, if the author had not made it a vehicle for insinuating his grave opinions upon a theological subject of the highest importance. The only serious purpose which we can discover in this treatise is

to teach the important fact—important, if true—that *the world has already outgrown Christianity*. As already stated, “the creeds and doctrines” of successive ages are represented as “the thoughts” of the monster-man, who “grows in knowledge and self-control,” as he undergoes an education “precisely similar to ours.” There are three stages in this training, corresponding to Childhood, Youth, and Maturity. In the first of these, we are subject to Law, — “to positive rules, which we cannot understand, but are bound implicitly to obey.” This answers to the system of Moses, and was the education of the Hebrew race. Commands of grave and trifling import are all mingled together, clear but peremptory in tone, regulating even the minutest particulars of food and dress. “But the reason for the minute commands is never given;” the people hear only the solemn announcement, “Thus saith the Lord.” Other nations also had a training parallel to the Jewish, through their respective systems of natural religion. These “were all in reality *systems of Law*, given also by God, though not given by revelation,” and afterwards so distorted as to lose nearly all trace of their divine origin. Such, in fact, is the necessary discipline of Childhood, whether of the individual or of the race.

Then Youth comes fiery and impetuous, breaking loose from all rules, and refusing to be guided except by Example. “He needs to see virtue in the concrete.” “He repeats opinions without really understanding them;” and when seemingly most independent and defiant of external guidance, he is really, only so much the more, guided and formed by the example and sympathy of others. And such an Example for the guidance of humanity, *in its youth*, was set forth in the Gospel. “The second stage for the education of man was the presence of our Lord upon earth.”

Fortunate was it for the world, according to Dr. Temple, that His coming was not delayed till now; “for the faculty of Faith has turned inwards, and cannot now accept any *outer* manifestations of the truth of God.” The third period of history, the Manhood of the race, with its largely developed powers and responsibilities, has come. The age of maturity and reflection has begun. We cannot now accept, either Law from

the Old Testament, or an Example from the New. The spirit or conscience has assumed its dominion, and "as an accredited judge, invested with full powers, decides upon the past and legislates upon the future, without appeal except to himself." "If we have lost that freshness of faith which would be the first to say to a poor carpenter, 'Thou art the Christ, the Son of the Living God,' — *yet we possess, in the greater cultivation of our religious understanding, that which, perhaps, we ought not to be willing to give in exchange.*" The concluding sentence of the Essay contains the emphatic statement, that "we are now men, governed by principles, if governed at all, and cannot rely any longer on the impulses of youth or the discipline of childhood."

Evidently this doctrine is only a modification of the Positive Philosophy of Comte, and was probably suggested by it. Comte teaches us, that there are three natural and necessary stages in the development both of the individual and of the race. In the earliest period, we attribute all movements and other phenomena to unseen personal agencies, that is, to Deities; we are then theologians, and believe in the supernatural. Next comes the vigorous but lawless condition, when we substitute abstractions, or what are called "the forces of nature," in the place of imaginary Deities existing beyond or above nature. This is the metaphysical stage, which confounds imaginary conceptions with realities, or substitutes names for things. At last, the mature age of Positive Science arrives, when, to say the truth, we believe in nothing, neither in Deities nor in abstract forces, but accept the phenomena only, and content ourselves with describing and classifying them, all attempts to discover their causes being renounced as a hopeless undertaking. Dr. Temple's theory is a modified form of Positivism, and, we think, an improvement upon it. He carries forward theological belief from the first into the second stage, and even makes the religious discipline of Youth more impressive and affecting than that of Childhood. But the third period is equally destructive of faith in the supernatural on either theory. At this epoch, says Dr. Temple, borrowing almost exactly the language of Comte, man "learns not to attempt the solution of insoluble problems, and to have no

opinion at all on many points of the deepest interest." External revelation, even if it could be believed in, would no longer have any binding power; the only law which we can accept is "a law which is not imposed upon us by another power, but by our own enlightened will."

An answer is hardly needed to sophistry so transparent. The law is first given in its simple or peremptory form, because, even if reasons were annexed, a child's intellect could not understand them. The subsequent development of the understanding, which leads to a recognition of the intrinsic beauty and righteousness of the precept, does not thereby abrogate it, but only increases its obligation. The Gospel did not annul the law. Christ himself says, "Think not that I am come to destroy the law or the prophets; I am not come to destroy, but to fulfil." The Jews were at first peremptorily commanded to abstain from idolatry, — reasons for this prohibition being unsuited to their understandings, and insufficient to break the force of their own early habits, and the example of surrounding nations. But certainly the obligation of this law did not cease when the Jews became enlightened enough to recognize the folly and wickedness of worshipping sticks and stones, and were thereby thoroughly weaned from the practice. Only to the Gentile converts (Acts xv. 19, 20) did the Apostles need to write, "that they abstain from pollutions of idols;" and for them, as well as for the Hebrews, the spirit of the injunction was carried farther, by commanding them to abstain even from meats offered to idols, and from "covetousness, which is idolatry." Here, as in other cases, the spirit of the law is not abrogated, but is made still more comprehensive, even when there is some relaxation of the outward form. Our Saviour did not repeal the Decalogue, but repeated it and forcibly summed up its spirit in two broad injunctions, rightly adding, "On these two commandments hang all the law and the prophets." It was only carrying out the same method to substitute prayer for sacrifice, giving alms to the poor for offering gifts in the temple, and observing the Lord's day in place of the Jewish Sabbath; for the same spirit of heartfelt adoration of the Giver of all good, and of self-denial and beneficence, lies at the bottom of all these commands.

Least of all does maturity of age and intellect supersede the necessity of an external revelation in the sense of rendering man independent of it, of doing away with its injunctions, or of substituting the promptings of his own heart and conscience for a message from on high. The sinless Example is still placed before us, not indeed in the flesh, but in the record of his life, death, and resurrection. If, as Dr. Temple thinks, we could not now recognize the Saviour's claims, even if he should appear again on the earth, and again, before our own eyes, waken a Lazarus out of his sleep, then we cannot acknowledge that he ever *did* come in the flesh, or that the grave, at his bidding, ever gave up its dead. If that "greater cultivation of our religious understanding," which this Essayist would have us believe is of more worth than faith in the Son of God, has been the natural result of man's own efforts continued for centuries, then an external revelation was never needed, and we cannot believe that one has ever taken place. But if this cultivation, this refinement of our religious perceptions, has been brought about only by the study of the Gospel, and by the deeper insight into its meaning which the experience of many generations and the enlarged culture of modern times are competent to give, then this very improvement is a new proof of the Divinity of the Christian revelation and the authenticity of its record.

But after all, even in Dr. Temple's own opinion, when he seriously reflects upon the matter, how large a portion of mankind, at the present day, have actually outgrown Christianity? Are missions to the heathen no longer needed, because even the heathen of our own time, standing upon the shoulders of all the generations that have preceded them, are so enlightened and refined in their notions of natural theology that the Gospel would be no boon to them? Even among the nations of Christendom, how many, both in understanding and in conduct, have already got beyond the Sermon on the Mount? Do even the English agricultural and manufacturing classes no longer need religious instruction, because they have at last become a perfect law unto themselves? We would not ask these questions by way of taunt, being well aware that Dr. Temple's answer to them would assuredly be the same as our

own. But they may serve to open his eyes to the illusion, natural enough, perhaps, for a recluse student, but still gross, which makes one man fancy himself empowered to speak for all mankind, and to pronounce that the Gospel is obsolete for the whole race, because half a dozen scholars at Oxford and Cambridge think that *they* have outgrown Christianity.

The next Essayist, Dr. Williams, takes "Bunsen's Biblical Researches" for his theme, and thus shelters himself, in part, behind the authority of a great German scholar and diplomatist. He cautiously informs us in the outset, that "the sympathy which justifies respectful exposition need not imply entire agreement." Perfect candor and frankness, however, would seem to require that the precise limits of agreement and dissent should be marked out by an expositor who eulogizes both the doctrine and the author that he expounds so warmly, that his enthusiasm cannot find strength of expression enough in sober prose, but breaks out finally into lofty verse. There is not much poetry in the two stanzas which are appended to Dr. Williams's article ; but they indicate clearly enough what qualities of Bunsen's writings and opinions have excited the writer's special admiration.

Every scholar will speak with entire respect of Bunsen's vast erudition, his indefatigable activity, and the earnest religious feeling, at times assuming the garb of pietistic mysticism, with which many of his writings are tinged. But a more rash and unsafe guide, in any province of speculative inquiry which requires the exercise of sober judgment and vigorous common-sense, could hardly be found, even in Germany. He is a wild and fanciful theorist in archæology, philosophy, and theology, whose conclusions have ceased to startle and perplex only because sober inquirers are prepared for them beforehand, and pass them over with charitable indifference. His books are an infliction on human patience, both in their voluminousness, and the entire want of method, symmetry, and continuity in their contents. But they generally contain a mine of valuable materials, which sober investigators can work to profit, and digest into system. Wherever great learning is not needed as the handmaid of reason, because the subject of inquiry lies not far off in the dim past, but comes home directly to the common

understanding, Bunsen's opinions have no peculiar weight or claim to deference. As an expositor of the doctrines of Christianity, certainly, he is not likely to find many English or American disciples besides Dr. Williams.

It is admitted, in this Essay, that the "recognition of Christ as the *moral* Saviour of mankind," whereby is meant the development by him of "that religious idea which is the thought of the Eternal," may seem to some "Baron Bunsen's most obvious claim to the name of Christian." We are not accountable for the perspicuity of this remark; and the sagacious reader may already have cause to suspect, that the German diplomatist's cloudiness of thought will not be dissipated to any great extent by his English expositor's clearness of expression. But the general meaning of the admission seems to be, that many Christian doctrines, as expounded by Bunsen, will seem to common observers not to bear any distinct traces of their Christian origin. This we can well believe, when further informed that, "by Resurrection," Bunsen would mean "a spiritual quickening;" and that "the eternal is what belongs to God as spirit, therefore the negation of things finite and unspiritual, whether world, or letter, or rite of blood." The hateful fires of Gehenna "may serve as images of distracted remorse;" and heaven is "not a place, so much as fulfilment of the love of God." Already the doctrine of another life and a final retribution beyond the grave seems to be pretty effectually refined and spiritualized away. But that no doubt may remain on the point, we are further informed that "both spiritual affection and metaphysical reasoning forbid us to confine revelations, like those of Christ, to the first half-century of our era;" and that the external evidences of the books of the New Testament are "sufficient to prove illustration in outward act of principles perpetually true, but not adequate to guarantee narratives inherently incredible, or precepts evidently wrong." Here is a lack of candor. Why does not Dr. Williams distinctly inform us *what* narratives in the New Testament are "inherently incredible," and *what* precepts are "evidently wrong?" Does he include among the former the narrative of miraculous events, even of our Lord's resurrection from the dead? He has no word of censure when

he quotes Bunsen's passionate exclamation, "How long shall we bear this fiction of an external revelation!" though he admits, "there will be some who think his language too vehement for good taste." But then he will not quarrel "*on points of taste* with a man who, in our darkest perplexity, has reared again the banner of truth, and uttered thoughts which give courage to the weak and sight to the blind."

Most instructive respecting the real purport of Bunsen's philosophical and theological opinions is his version of the doctrine of the Trinity, which his English disciple sets forth and accepts, seemingly without any suspicion of its true paternity. Here we must copy literally.

"His [Bunsen's] doctrine of the Trinity ingeniously avoids building on texts which our Unitarian critics, from Sir Isaac Newton to Gilbert Wakefield, have impugned, but is a philosophical rendering of the first chapter of St. John's Gospel. The profoundest analysis of our world leaves the law of thought as its ultimate basis and bond of coherence. This thought is consubstantial with the Being of the Eternal I AM. Being, becoming, and animating, — or substance, thinking, and conscious life, are expressions of a Triad; which may be also represented as will, wisdom, and love, — as light, radiance, and warmth, — as fountain, stream, and united flow, — as mind, thought, and consciousness, — as person, word, and life, — as Father, Son, and Spirit. In virtue of such identity of Thought with Being, the primitive Trinity represented neither three original principles, nor three transient phases, but three eternal subsistences in one Divine Mind. 'The unity of God, as the eternal Father, is the fundamental doctrine of Christianity.' But the divine Consciousness or Wisdom, consubstantial with the Eternal Will, becoming personal in the Son of Man, is the express image of the Father; and Jesus actually, but also mankind ideally, is the Son of God."

"All this," Dr. Williams confesses, "has a Sabellian, or almost a Brahmanical sound." Brahmanical, indeed! Why it is pure and explicit Hegelianism, which our English Essayist has been expounding and recommending, just as Molière's Bourgeois had all his life talked prose, without knowing it. He challenges his more orthodox brethren in the English Church to confute it "even on patristic grounds," adopting blindly Bunsen's rash assertion, that this doctrine, or some-

thing very like it, may be found in Justin Martyr, Tertullian, Hippolytus, and Origen ; and he throws out the significant menace, "If our defenders of the faith would have men believe the doctrine of the Trinity, they had better not forbid metaphysics, nor even sneer at Realism." Dr. Williams is evidently not aware of the peculiar adroitness of interpretation, which enables a practised Hegelian to recognize the express form and likeness — the *vera effigies* — of his much loved doctrine *everywhere*, — not only in the Bible, the Fathers, and the decrees of Councils, but in every form of religion that has ever existed on earth, in every system of philosophy, and in every page of history. Only allow him his boasted postulates, that Thought and Being are identical ; that whatever is Real is Rational, and whatever is Rational is Real ; and that the first principle of Logic and the fundamental law of human thought, which declares that two Contradictories exclude each other, is false, inasmuch as any two Contradictories actually coalesce and melt into one doctrine or being which includes them both ; — only allow these modest demands, and he will point out Hegelianism everywhere that he chooses to look for it. In the passage which we have just cited, every one who has any tincture of the latest German philosophy of the Absolute will recognize at once the characteristics of the Hegelian logic and of the doctrine evolved from it. It will enable any Unitarian who pleases to become a Trinitarian without difficulty, so that he can repeat the most orthodox formulas, the Athanasian Creed itself, without stammering. A triad exists wherever two contradictories or opposites can be found ; for the law of trichotomy, which is the law absolute, the law of laws in the Hegelian logic, enables us to take up the two contradictory ideas, the thesis and the antithesis, and melt them into one synthetic notion, which includes them both. Thus, pure Being, as wholly indeterminate or devoid of attributes, is identical with its opposite, Non-being or Nothing. But as creation consists in nothing *becoming* something, the third member of the triad, which reduces the two other members to unity, is *becoming*, or determinate existence. Now, as Thought and Reality are identical, each being the law and essence of the other, any one who can *think* creation does thereby create, or *be-*

comes the Creator. Hegel's philosophy consists in finding everywhere unity under contradiction, and identity under difference.

The application of this system to the leading dogmas of theology, to the Trinity, the Incarnation, and the Atonement, may be easily made; but it leads to conclusions at once so monstrous and so shocking, that we prefer not to stain our pages with them. Their general character is darkly but sufficiently indicated in the citation just made from Dr. Williams's Essay; and a full development of the doctrine, as applied to all the forms of religion that have ever existed among mankind, may be found in Bunsen's latest work, "*God in History*," which has supplied the Essayist with all his materials. It is characteristic of this philosophy, that, whether used as a means of interpreting Buddhism, Greek polytheism, Hindoo or Scandinavian mythology, or Christianity, it leads to equally satisfactory results. A consistent and expert Hegelian may repeat any theological creed, and join in any religious rite. Differences of faith are of little moment, when they are tried by a system of logic which was invented for the express purpose of reconciling contradictories. It is curious that Bunsen should have adopted the system just at the time when, even in Germany, it has become discredited and seems to be rapidly passing away. After enjoying an unprecedented success, after coloring every form of German speculation in philosophy and theology for more than a quarter of a century, a reaction has sprung up against it on its native soil, and appears to be now hurrying it into oblivion. On English ground it cannot hope to find many proselytes, though a few scholars like Dr. Williams may find in it the means of pacifying their scruples at repeating the formularies of the Church and continuing their implied assent to the Thirty-nine Articles.

Of the next Essay, on "*the Study of the Evidences of Christianity*," we must speak with the reserve which is rendered becoming by the recent death of its author, the Rev. Baden Powell. It is in some measure a repetition and a defence of the doctrines avowed in a late independent publication, by the same writer, on "*the Order of Nature*." The discussion in this Essay turns, not upon the old question, *whether a reve-*

lation can be proved by miracles, but upon the far deeper and more important one, whether Christianity, regarded as a system of abstract religious doctrine, cannot be received on faith, even by those who deny both the fact and the possibility of any external revelation whatever.

This is at once a clear and a candid statement of the real point at issue. *An external revelation is itself a miracle*, the greatest of all miracles. It is a break in the order of nature, an interruption of the ordinary sequence of physical events, made by the Creator and Governor of the universe for the express purpose of declaring His will to man in a more distinct utterance, and a more awful and impressive form, than would be possible if the ordinary succession of external phenomena remained unbroken. The miraculous attestation of Christ's mission upon earth, through the mighty works which he did, is one thing; the miraculous character of that mission itself, the immediately divine origin both of the message and of him who bore it, is another. Those who, on the ground of the essential incredibility of any interruption of the laws of nature, deny the miracles that he wrought, are bound also to deny the miracle that he was. Even if Jesus of Nazareth had not been "approved of God among you by miracles, and wonders, and signs, which God did by him in the midst of you, as ye yourselves also know," yet his mere appearance upon earth, if he really possessed the character and authority which he claimed, — that is, if he was not an impostor, — was as great a miracle as if he had come in the clouds of heaven openly manifesting all the glory of the Father.

This is the real bearing and extent of the question as Professor Powell has distinctly stated it, and he has shown much courage and frankness in so doing, and in openly taking up his own position respecting it with all its consequences. One object of his present Essay seems to be, to defend himself against the charge of going farther than other Rationalists, and thereby giving up all that is peculiar to Christianity. His answer is, that he has not gone farther; for the ground which he has taken is contained by irresistible implication in the arguments and doctrines which they have avowed without any special censure. He says, and we cite the passage as he has himself

italicized it, that "a considerable school have been disposed to look to the intrinsic evidence *only*, and to accept the declarations of the Gospel *solely*, on the ground of their intrinsic evidence and *accordance* with our best and highest moral and religious convictions ;" and he rightly affirms that the considerations thus adduced are "of a kind which affect the *entire primary conception* of 'a revelation' and its authority, and not merely any alleged *external* attestations of its truth." He also admits, that "the idea of a *positive external Divine revelation* of some kind has formed the very basis of all HITHERTO received systems of Christian belief." He charges "the professed advocates of an external revelation and historical evidence" with inconsistency, for occasionally "making their appeal to conscience and feeling, and decrying the use of reason;" and he brings the same accusation of inconsistency against "the professed upholders of faith and internal conviction as the only sound basis of religion," because they nevertheless regard "the external facts as not less essential truth which it would be profane to question." His own doctrine is, that the essence of a religion is "the disclosure of *spiritual* truth as such," which must be received, if at all, on faith, and not on evidence.

On this theory, evidently, the whole narrative of our Saviour's life must be rewritten, and even the scheme of Christian doctrine, so far as it relates to his peculiar nature and office, must be abandoned. The story of his miraculous birth is a fable; the mighty works that he did are incredible myths; and the sepulchre in which he was laid never gave up its dead, unless, indeed, his disciples came by night and stole him away. The purely abstract and spiritual portion of the doctrine that he preached, apart from his assurances of a resurrection and a judgment to come, which are facts that no observation of the present laws of nature can warrant, must be received as true on the same grounds, and to the same extent, that we accept the teachings of Socrates; namely, their accordance with our moral and religious instincts. We are not even at liberty so far to extend the domain of faith as to include the facts *on account of* the doctrine, though *not as evidence for* the doctrine; that is, the creed must not embrace the resurrection, or any

other miraculous occurrence, even though not relying upon it as an attestation of purely spiritual truth. For it is expressly taught; that "matters of clear and positive fact, investigated on critical grounds and supported by exact evidence, are properly matters of knowledge, not of faith."

But the great error of the Essayist results from the hopeless confusion of his ideas in respect to the true nature of physical causation. Sometimes, he seems to adopt the doctrine of the Positivists, that such causation is nothing but the uniformity of sequence which enables us to predict occurrences, but not to explain them, the very idea of efficient cause being, in their philosophy, a figment of bad metaphysics. Of course, he who denies efficient agency of any sort, must also deny supernatural agency; but he does so at the expense of rejecting an original and irresistible law of the human mind, which declares that every change or beginning of existence *must* have an efficient cause, whether we can discover it or not. Then, again, the Essayist, unable to prove from mere induction the necessary and axiomatic truth, that no physical change whatever can take place "unless through the invariable operation of a series of eternally impressed consequences, following in some necessary chain of orderly connection," appears to attribute necessary and efficient causation to matter, and to deny voluntary causation to mind. He admits that "we continually behold lower laws held in restraint by higher, — mechanic by dynamic, chemical by vital;" but he demurs to the third instance, because he "must remark in passing, that the meaning of 'moral laws controlling physical' is not very clear." Why not? Is not the conscious voluntary exertion, whereby I raise my arm, and thus support a weight that would otherwise fall, an indubitable case of moral and conscious force controlling or overriding, in a particular instance, the action of gravitation? And is not the whole history of physical science one long record of the triumphs of moral and intelligent force over physical law, which is everywhere so bent, guided, and overruled by intelligence, that it seems not so much man's master as his slave? Certainly, in this respect, as in so many others, man is made in the likeness of his Creator; as Lord Bacon truly says, "*etiam inventa quasi novæ creationes sunt, et divinorum*

operum imitamenta." If the Essayist believes in a personal God, — and otherwise we have no argument with him, for we admit the atheist's perfect right to say that, to him, a miracle is a thing absolutely incredible, — then he must acknowledge, that the action of divine agency in suspending a law of nature is just as comprehensible and credible as that of human agency accomplishing a precisely similar result on a smaller scale. Slowly, after much study and effort, and often indirectly, man performs that which infinite power and wisdom does at once. Does the length or difficulty of the operation alter its essential nature? The surgeon puts again into their proper shape and position the pieces of a bone which the relentless law of gravitation has crushed; and if it be argued that *he* cannot cause the fragments to reunite, what is this but saying, that man performs a very small part of the cure, and a compassionate God does the rest? Suppose that never since the world began, save in one solitary instance, did the broken pieces of a bone thus reunite. Then this single instance would be a miracle, — a violation of a fixed law of nature, — and the Essayist would refuse to believe it on any testimony, just as he now refuses to believe that Lazarus was raised from the dead. But he believes without difficulty, and on very slight testimony, that this phenomenon of a fractured bone being reunited has occurred more times than he can reckon. Yet what sort of logic is that, which pronounces it absolutely incredible that the thing should happen for the first time only, but perfectly credible that it should take place again and again, till it has ceased to be a wonder? The fact is, our author's whole argument against miracles, founded on the absolute immutability of physical law, amounts only to this poor truism, that such a law is never suspended without an adequate cause. Nobody asserts the contrary. He who believes in a miracle believes that God suspended it.

The fourth Essay, on the National Church, by the Rev. Henry B. Wilson, is chiefly curious as indicating the views of these writers as to the possibility and rightfulness of sceptics continuing to act as Christian clergymen, and, as such, to hold their benefices and other allotted portions of Church income, to officiate at the sacraments, to repeat weekly, if not daily,

the Service for the day, with either the Apostles', the Nicene, or the Athanasian Creed, together with the lessons from the Old and New Testaments, and to perform all other clerical functions. The general tone of the Essay, and the nature of the topics considered in it, strikingly illustrate the truth of our introductory remarks, upon the frame of mind and temper in which a clergyman finds himself, who has actually quarrelled with his profession and ceased to believe the doctrines that he is bound to teach, but who cannot summon up decision and fortitude enough to resign his office and look elsewhere for occupation and support. The writer adopts a querulous tone, and appears discontented with himself. The Essay is a sort of involuntary confession, a record of the anxious and bitter self-communings that grow out of a false position and a wide discrepancy between opinion and profession. Mr. Wilson evidently does not intend to attack Christianity, but only to justify himself. Unhappily, a necessary part of his own justification is to show that he has some good reason for quarrelling with his religion, and that it is a veritable grievance to be obliged to repeat the formularies of faith. Accordingly, he does not actually argue against Christianity, but complains of it, frets about it, strives to pick flaws in it, and treats it as pettishly as a child does a lesson which only fear of the rod induces him to study.

Thus, many evils in all ages, he tells us, — and the information is not very new, — have been linked with the Christian profession, such as religious wars, delusions, and spiritual tyrannies; and “many goods of civilization in our own day have apparently not the remotest connection with the Gospel.” He complains that forty-two per cent. of the English people, as was found by actual count, neglected to attend means of public worship within their reach on the census Sunday in 1851. Scepticism is not radicalism now, Mr. Wilson says, whatever it may have been half a century ago, but is “the result of observation and thought, not of passion.” Our knowledge of the nations of the earth has been increased, and we have become acquainted with great empires “Pagan, or even atheistic.”

“We are told that to know and believe in Jesus Christ is in some sense necessary to salvation. It has not been given to these. Are

they, will they be hereafter, the worse off for their ignorance? As to abstruse points of doctrine concerning the Divine Nature itself, those subjects may be thought to lie beyond the range of our faculties; if one says aye, no other is entitled to say no to his aye."

"If we would set many unquiet souls at rest," we are bound to explain "the unequal distribution of the Divine benefits." Christianity did not overspread the world very rapidly, after all; it has never been professed by "more than a fourth part of the people of the earth." Among Christian converts, even in the Apostolic age, there were those who had no belief in the resurrection from the dead, and St. Paul argues with such elaborately, "without expelling them from the church;" though, we will remind Mr. Wilson, in passing, that there is no evidence, and it is not very probable, that he allowed them to be ministers, bishops, or presbyters. "There were current in the primitive church very distinct Christologies;" and we can neither attribute to any defect in our capacities, nor to any imperfect spiritual endowments of the writers, "the difficulty, if not impossibility, of reconciling the genealogies of St. Matthew and St. Luke, or the chronology of the Holy Week, or the accounts of the Resurrection."

Argument would be thrown away upon a fretful man, who is merely bent upon justifying his pettishness to himself. Otherwise, we might remind Mr. Wilson, that Christianity cannot fairly be held responsible for the faults of Christians which it has failed to cure, since it did not undertake to deprive man of the freedom of his will; that it may have been of inestimable benefit to the world, even if it has not been accepted by all barbarous and uncivilized tribes; that even the worst men at times feel its influence, and acknowledge its power to comfort and to save; that surely the best elements of modern civilization are inseparably intertwined with it, and would perish without its support; and that some difficulties in the interpretation of the record are the necessary result of its transmission through eighteen centuries to nations of widely different habits and modes of thought, without a continued miracle being wrought in order to adapt its expressions to ever-changing circumstances. The truth and purity of the revelation is one thing, and the perfectness of the record of it,

after a lapse of one or two thousand years, or even in the Apostolic age, is another. If the benefits conferred upon the world by Christianity had stopped at any point short of turning this earth into heaven, and men into gods, whining complaints would still be possible because it had not accomplished *more*. The question is not, whether the religion has done all the good that is conceivable, but whether the good which it has actually done is so great that we have full cause to thank God for revealing it to man.

The main purpose of Mr. Wilson's Essay is to present the arguments for converting the present Established Church into a truly "National Church," whereby he means one so broad that it would literally contain *all* the people, of whatever shades of belief or unbelief, those who deny the resurrection, the revelation, or even the being of a God, included. "A National Church," he says, with startling frankness, "*need not, historically speaking, be Christian*, nor, if it be Christian, need it be tied down to particular forms which have been prevalent at certain times in Christendom." All that is essential is, "that it should undertake to assist the spiritual progress of the nation." And the latitude which he would concede to the laity, he boldly demands for the clergy. "The freedom of opinion," he says, "which belongs to the English citizen, should be conceded to the English Churchman; and the freedom which is already practically enjoyed by the members of the congregation, cannot without injustice be denied to its ministers."

The Essayist adopts entirely Coleridge's theory respecting the endowment of the Established Church, which endowment he calls the Nationalty, because it is the property of the nation at large, and, as such, does not descend by inheritance or testament. "The enjoyment of it is subject to the performance of special services, and is attainable only by the possession of certain qualifications." The privilege of participating in it should be free from all unnecessary restraint, so that the Clerisy may be kept up and recruited from the whole body of the citizens. Though the Nationalty at first was undoubtedly a foundation only for pious uses, as it originated in gifts and bequests for the support of a *Christian* Church and keeping up

Christian ordinances, the object of this argument seems to be that it should now be applied to the development of the ethical and spiritual nature of the people, without the slightest reference to speculative opinions. The right to a share in the endowment ought not to depend, it is urged, "on the possession of an abstractedly true and supernaturally communicated speculation concerning God," but only on a right heart and a pure life, as these give the fullest manifestation of a divine life in man. "Speculative doctrines," says Mr. Wilson, "should be left to philosophical schools. A *national* Church must be concerned with the ethical development of its members."

We are not answerable for the clearness of this exposition of Mr. Wilson's views; for to avoid any injustice to him, we adopt his own language as far as our limits will permit, and his expressions are studiously wary and guarded. But the general drift of his argument is evident enough towards this conclusion; that a belief in Christianity ought no longer to be a condition prerequisite for obtaining and holding office as a clergyman, and thereby sharing in the honors and endowments of the Established Church. Now, whatever the Essayist may think, there is no doubt that this condition will continue to be insisted upon, at least for the present. Neither Parliament, nor Convocation, nor the great body of the English people, will favor any proposition to open the Church, either for the entrance or the continuance of a class of clergymen who have got beyond Christianity, and no longer believe in an external revelation, or in any supernatural event whatever.

We are thus driven to examine the only remaining question, whether the Creeds, Articles, and Canons, which now limit and obstruct admission into the Church, cannot be so liberally interpreted that clergymen can squeeze in, or at any rate can stay in, if they are already within the precincts. The Essayist displays remarkable skill in casuistry while endeavoring to answer this question. More ingenious attempts to explain away the clearest language, or to avoid the plainest dictates of conscience, we have never heard of, save those exposed by Pascal in his immortal Provincial Letters. Thus, the sixth Article of the Church declares, that "Holy Scripture containeth all things necessary to salvation, so that whatsoever is not read

therein, nor may be proved thereby, is not to be required of any man that it should be believed as an article of the Faith," &c. Mr. Wilson's comment is, that this language requires nothing to be believed unless it be Scriptural; but it does not affirm, that everything which is Scriptural is therefore true and must be believed. Under such terms, it is said, "one may accept literally, or allegorically, or as parable, or poetry, or legend," whatever portion of Holy Writ he chooses so to interpret. But does not the Article plainly teach that Scripture affords the ultimate and only test of doctrinal truth, and does it not thereby teach, by necessary implication, that every portion of Scripture must be believed? Though the "Canonical books of the Old and New Testament" are enumerated and defined as constituting "Holy Scripture," Mr. Wilson goes on to argue that, "even if the Fathers have usually considered 'Canonical' as synonymous with 'miraculously inspired,' there is nothing to show that their sense of the word must necessarily be applied to our own sixth Article."

The act of subscribing the Thirty-nine Articles, which is required of all the clergy, is declared by the Essayist "to be inoperative upon the conscience by reason of its vagueness;" for the effect and meaning of "subscription" are nowhere plainly laid down. It amounts only to the acknowledgment of a law "to which the subscriber is in some sense subject." But the Church Canons established in 1603 appear to affix a very definite meaning to the act of subscription. The fifth of these Canons declares, that "whoever shall hereafter affirm that any of the Thirty-nine Articles is in any part superstitious or erroneous, or such that he may not with a good conscience *subscribe to the truth of them (vel omnino ejusmodi ut in eorum veritatem salva conscientia subscribi nequeat)*, let him be excommunicated," and not be restored to his clerical office till he has publicly recanted his impious error.

"Yet an article may be very inexpedient, or become so; may be unintelligible, or not easily intelligible to ordinary people; it may be controversial, and such as to provoke controversy and keep it alive when otherwise it would subside; it may revive unnecessarily the remembrance of dead controversies, — all or any of these, without being 'erroneous'; and though not 'superstitious,' some expressions may

appear so, such as those which seem to impute an occult operation to the sacraments. The fifth Canon does not touch the affirming any of these things, and more especially, that the Articles present truth disproportionately and relatively to ideas not now current."

Moreover, there is a statute, the 13th of Elizabeth, declared by Sir William Scott to be still in full force as a law of the land, which ordains that no person shall hold a benefice, unless he has previously subscribed the Articles, and unless, within two months after his induction, he shall have publicly read the said Articles in the parish church of that benefice, "with declaration of his *unfeigned assent* to the same;" failing which declaration, he shall be, *ipso facto*, "immediately deprived." Respecting this statute, Mr. Wilson argues that "the meshes are too open for modern refinement." And he might have added, that no form of words whatever can be binding upon the conscience of any man, who will allow himself so far to profit by the arts of what he here calls "modern refinement," but what we call base chicane and wicked casuistry, as to seek for "meshes" in the mere verbal expression of the promise, which may be open enough to allow him to *creep through*. We have been taught from early childhood, and should be ashamed to repeat the lesson to any others than young children, that the moral guilt of a falsehood is not palliated, but aggravated, by the equivocation which palters with the sense, and attempts to keep the word of promise to the ear while breaking it to the hope; and that the opposite doctrine should be taught publicly, and in print, by one claiming to be a Christian clergyman, is to us a strange and mournful event. Yet Mr. Wilson, passing without notice over the epithet "unfeigned," which here qualifies the required assent, and after remarking that it is unnecessary "to repeat concerning the word 'assent' what has been said concerning 'allow' and 'acknowledge,'" goes on to argue as follows:—

"*Forms of expression*, partly derived from modern modes of thought on metaphysical subjects, partly suggested by a better acquaintance than heretofore with the unsettled state of Christian opinion in the immediately post-apostolic age, *may be adopted* with respect to the doctrines enunciated in the first five Articles, *without directly* contradicting, impugning, or *refusing assent* to them, *but passing by the side*

of them, — as with respect to the humanifying of the Divine Word and to the Divine Personalities.”

Three of the five Articles here alluded to refer especially to the doctrines of the Trinity, the Incarnation, and Atonement, and the Resurrection of Christ; and by “*forms of expression derived partly from modern modes of thought on metaphysical subjects,*” Mr. Wilson probably means the technical phraseology of Schleiermacher, Hegel, Strauss, and other German philosophers, which allows one to speak of a sort of Christ embodied in the consciousness of every Christian individual, or to identify the Saviour with the whole human race, saying that it is Humanity which unites the two natures, and which dies, rises, and ascends to heaven, belief in an historical Christ being excluded altogether. At any rate, such are the doctrines which, according to this Essayist, under the garb of modern metaphysical phraseology, are capable of “passing by the side of” the first five Articles of the English Church, “without directly contradicting, impugning, or refusing assent to them.”

Now it is not for us, here or elsewhere, to maintain the verity of the Thirty-nine Articles as statements of sound theological doctrine, or to uphold the justice and expediency of fencing round the Church of England with so many Creeds, Canons, and Articles, as means of excluding heterodoxy. These are points to be considered only by that Church itself. The only question to be answered here is, whether beneficed clergymen of that Church, who are certainly free to leave it whenever they see fit, are nevertheless justified in remaining in it, performing its duties, and sharing its revenues, when their own theological opinions are such as have been here stated, and when they can ‘allow,’ ‘acknowledge,’ and declare their ‘unfeigned assent’ to its Articles and Canons only by means of such equivocations and perversions of language as we have just quoted in their own words. And this is a matter for them to consider, not so much as clergymen, nor even as Christians, but simply AS HONEST MEN. Adopt even Mr. Wilson’s own low idea of the proper function of a National Church, — that its object is not to teach “an abstractedly true and supernaturally communicated speculation concerning God,” but only to aid

“the ethical development of its members.” What sort of ethical development is that which elaborately teaches the art of explaining away, or creeping through the meshes of, the most deliberate promises and the most solemn declarations of belief? How can man retain — we will not say, any faith in God, but — any confidence in his brother-man, if the binding force of every contract, and the truthfulness of every asseveration, were to be tried in the same scales in which Mr. Wilson weighs the obligation of a subscribed declaration of belief? These Essayists are teaching us, not merely a new system of speculative unbelief in theology, but a new code of practical ethics, which, if it were true, would render men as incapable of living together in peaceful society as if they were what Hobbes describes them to be, — grasping savages, whose insatiable cupidity can be restrained only by brute force.

One honorable exception must be made. Mr. C. W. Goodwin, the author of the next Essay in this volume, on “The Mosaic Cosmogony,” after completing his preparation for the ministry, has, if we are rightly informed, stripped off his gown and voluntarily abandoned the clerical profession, because he could not conscientiously subscribe the required declarations of belief. Such conduct affords the best practical rebuke of the course pursued by his associates in this volume, most of whom still continue to stand up every week in the face of a whole congregation, and solemnly repeat aloud the Apostles’ Creed, from its simple but lofty introduction, “I believe in God the Father Almighty,” even to its consoling and impressive close, “the Forgiveness of Sins, the Resurrection of the Body, and the Life everlasting”; though to three fourths of the clauses in that Creed, the only response which, in heart and conscience, they could make, would be, “I do NOT believe.”

Mr. Goodwin’s Essay need not be considered here at any length, as it is unexceptionable in tone, contains nothing new, and the topic of which it treats has been so much discussed elsewhere that it is fairly exhausted. We can only wonder at the exaggerated importance which has been attributed to the subject, and which has called forth so much discussion. The whole question turns upon the proper interpretation to be

given to a few verses, or rather to a few words, in the first two chapters of Genesis. Perhaps a dozen different modes of interpreting them have been proposed, any one of which has a certain plausibility, while we agree with Mr. Goodwin in thinking that not one of them is entirely free from objections. But give these objections their full weight, and what do they amount to? Any bearing which they can have upon a belief in Christianity is so remote and indistinct, a matter of such doubtful inference, that a person's sanity would almost be questionable who should allow them to perplex or darken his faith. Genesis, in many respects, stands alone among the books of the Bible. It is probably the oldest of them all, and perhaps the oldest written book of any length that is now extant. It is the record of a tradition of a primitive revelation to mankind. The record, as we now possess it, is imperfect, and the tradition was probably still more imperfect; but the authenticity of the primitive revelation itself is attested by the general coincidence of its contents with the latest and best-established discoveries of modern science, — a coincidence admitted by Mr. Goodwin himself, with all his disposition to pick out and exaggerate discrepancies in detail, — and a coincidence that must appear even miraculous, when it is remembered that the book was written long before the birth of anything that deserved the name of human science, and that all other cosmogonies which even approximate it in antiquity are absurd and worthless. After giving a very good abstract of the latest and most certain conclusions of the geologists, Mr. Goodwin says: "Now these facts do certainly tally to some extent with the Mosaic account, which represents fish and fowl as having been produced from the waters on the fifth day, reptiles and mammals from the earth on the sixth, and man as made last of all." But he adds that "the agreement, however, is far from exact." We admit it; and as Genesis was certainly not written for the purpose of anticipating the discoveries of modern science, and as the forms of expression and modes of thought which belonged to the age when it was written are very unlike those that are current in our own day, we are neither surprised nor disturbed at the want of exactness.

The Rev. Mark Pattison next contributes an historical essay

on the "Tendencies of Religious Thought in England, 1688-1750." It is ingenious, entertaining, and sophistical. The facts are selected in order to sustain a preconceived theoretical opinion, — a foregone conclusion, which, by a common rhetorical artifice, is nowhere expressly stated, though the way towards it is so skilfully marked out by selecting and marshalling the facts, that the unwary reader is entrapped into accepting it as his own deduction from known and acknowledged premises. Of course, for the very reason that the facts are *selected* for this purpose only, the statement of them is but half the truth, and therefore the conclusion towards which they seem to tend is just as likely to be one-sided or false, as if it did not even pretend to have any facts at all for its basis.

The thesis to be maintained is, that what are technically called "the Evidences" of Christianity are worthless; that elaborating and writing them out is both an indication and a cause of a very low state of theology; and that the study of them is unprofitable, and even degrading. And the historical proof of this doctrine is as follows. The eighteenth century, especially the thirty years which succeeded the peace of Utrecht (1714), though a period of great commercial and material prosperity for England, was "one of decay of religion, licentiousness of morals, public corruption, profaneness of language, — a day of rebuke and blasphemy." Mr. Pattison prettily and forcibly adds, "that it was an age whose poetry was without romance, whose philosophy was without insight, and whose public men were without character." This moral degradation, we are further informed, is not attributable to the material welfare of the country as its cause, but was due to the low state of theology, — especially to the fact that the theology of those times was mainly devoted to expositions of "the Evidences," — to repeated and futile attempts to prove what John Locke calls "the Reasonableness of Christianity." The conclusion which the reader is invited to draw for himself is, that *because* John Locke, Addison, Bentley, Berkeley, Butler, Leland, and many others, wrote frequently and vigorously in defence of Christianity, general infidelity ensued, and there was a wide-spread corruption of morals.

Now we believe, not that the display of umbrellas brought

down the rain, but that the rain brought out the umbrellas. It is far more probable that the prevalence of infidelity induced Bentley, Berkeley, and Butler to write in defence of religion, than that the writings of these men produced or enhanced the unbelief which they sought to cure. The chronology of the period favors this view. The most noted publications of the English Deists, as they are called, appeared before 1714, some of them, such as those of Blount and Shaftesbury, falling within the preceding century; while most of the answers to them were published after the peace of Utrecht. And low as the state of religion and morals was during the thirty or fifty years after the accession of the House of Brunswick, during the half-century which preceded that event it was far worse. The reigns of the first two Georges were bad enough, but they did not equal in profligacy, dissoluteness, and irreligion those of the last two Stuarts. Charles II. was as worthless a monarch as ever sat on an English throne, — without heart, patriotism, morals, or religion; his court, ministry, and Parliament were as corrupt as he was, and his people were little better. James II. was a stupid and cruel bigot; and the Church under him — equally unprincipled, at first in its fawning submissiveness, and then in its rebellious intolerance — was worthy to have such a king for its temporal and spiritual head. Walpole and the Pelhams were not very scrupulous ministers; but they appear almost as saints when compared with Shaftesbury and the Cabal, with Danby and Rochester. The stage at this period was a brothel, the dramatists and poets are unfit for a modest woman to read, and the clergy, with a few shining exceptions, had neither respectability, talents, nor influence. From the corruption of those times English Deism was a natural outgrowth. Blount, Toland, and Shaftesbury were not very formidable opponents of religious belief, but their power consisted in the aptitude of the people to receive the lessons which they taught. They addressed a prepared and willing audience, who had already lent an itching ear to Hobbes, and were ready, soon afterwards, to listen to Collins, Woolston, Tindal, and Morgan.

The reaction against this woful dissoluteness and unbelief began as early even as the reign of Anne, — the writings of

Locke, Newton, Bentley, and Addison certainly contributing towards the happy result. And the movement which they began was nobly continued, during the two ensuing reigns, by some of the finest minds of which English literature and philosophy can boast, and with results which, though gradual and incomplete, were still broad and permanent. Immorality and unbelief at least became ashamed to show themselves as openly as before; they slunk into corners and hiding-places, and the general tone of literature became decorous and respectable. The public generally were weaned from the scoffs and ribaldry on which they had previously battered, and learned to respect religion and virtue, even if they did not always practise what they honored. The infidelity which had been so rampant at the beginning of the century now fell so rapidly out of fashion, that when Hume, at once the ablest and the most decorous of the Deists, published his *Treatise on Human Nature*, in 1738, he was obliged to confess that it fell still-born from the press, and did not obtain even the honor of a reply. That the theologians and philosophers who contributed to this happy result should have devoted their writings chiefly to an exposition of "the Evidences," and a defence of the doctrines of Christianity, is no more to be wondered at than that, at a much earlier age, Justin Martyr and Tertullian should have published *Apologies for Christianity*. In both cases, Christians were addressing a generation of Pagans.

It may suit Mr. Pattison's purpose, and fill out his triad of antitheses, to sneer at the philosophy of this period as "without insight." But it shows bad taste and defective knowledge to include in this sneer such men as Butler, the father of modern ethical science, not only in England, but for all Europe; Berkeley, the pure and refined spiritualist, and one of the most elegant writers and original philosophical thinkers that England has produced; Samuel Clarke, a co-worker with Newton, the well-matched opponent of Leibnitz, and one of the greatest masters of abstract metaphysical reasoning that the world has ever seen; and even Warburton, who, with all his defects of temper, has been well called "the last of our really *great* divines." To represent such men, with their coadjutors, Locke, Bentley, and Addison, as over-matched, or even well-matched,

by such small fry as Blount, Toland, Collins, and Woolston, is but a piece of the same arrogance which declares that the works of Barrow now "*excite perhaps only a smile of pity*!" Why, Bentley alone, the greatest classical scholar of modern times, appears, both in his Boyle Lectures and his controversy with Collins, like the giant Thor crushing his opponent with a single blow of his ponderous hammer. Yet this Essayist informs us, in his usual sneering tone, that "the more they demonstrated, the less people believed;" and that, if circumstances had not turned theological study another way, "the Deistical controversy might have gone on indefinitely, and the 'amabœan strain of objection and reply, *cantare pares et respondere parati*' have been prolonged to this day." But what victory could have been more decisive than the one achieved at least as early as 1750, before which time, as Mr. Pattison himself remarks, the Deists had first ceased to find an audience, and then ceased to write? When the posthumous works of Bolingbroke, "the last of the professed Deists," were first published, in 1754, "the interest in them was already gone; they found the public cold or indisposed." And we have already seen what was the reception of Hume sixteen years earlier.

The offence which Berkeley, Butler, and Clarke committed, and for which they are tried by the Rev. Mr. Pattison and found wanting, "expiating the attention they once engrossed by as universal an oblivion," is that they wrote in defence of their religious faith when it was assailed by scoffers, and thus created one important department of English theology, the *Evidences of Christianity*. Our Essayist cherishes an intense dislike of these "*Evidences*," and heaps upon them all the sarcasms which he can invent or muster. He calls them "that Old Bailey theology, in which, to use Johnson's illustration, the Apostles are being tried once a week for the capital crime of forgery." He tells us, in one place, that "neither the external nor the internal *Evidences* are properly theology at all;" and in another, that "they were the proper theology of an age whose literature consisted in writing Latin hexameters." Then he calls them "home-baked theology," and borrows one sarcasm from Maurice, "that the result of the whole

is, that 'it is safer to believe in a God, lest, if there should happen to be one, he might send us to hell for denying his existence ;' " and another from a Tractarian, that the general result is "three chances to one for revelation, and only two against it." He tells us that, when writing upon the Evidences was in fashion, "the divine went out into the streets, with his demonstration of the being and attributes of God printed on a broadside."

Perhaps a new standard of manners as well as of theology has been erected at Oxford ; but here in New England it would not be considered very decent and proper, it would not be "quite the thing" for a Christian clergyman, to heap up such sarcasms upon such a subject. But Mr. Pattison knows best what the audience which he is addressing will most relish. It is only charitable to him to believe, that he objects to "the Evidences" not merely *as evidence*, for that would be to reject the only test by which truth can be distinguished from error, either in a court of justice, in science, in philosophy, or in our daily conduct ; since, on all these occasions, we must make up our minds *on evidence* of one sort or another, or else give up man's noble prerogative of reason, and decide at haphazard. He does not, then, reject *evidence as such*, but only "*the Evidences of Christianity* ;" or, in other words, his objection lies, not against the mode of proof, but *against the thing to be proved*. He will admit evidence in relation to every other topic under heaven, and will scoff at it only when it is in favor of Christianity. He will even admit it when it is *against* the Christian religion, but not when tending to establish it ; for, as we have seen, one leading purpose of his associates in this very volume is, to heap together against this religion all the objections which they can gather, whether from English Deism, from modern physical science, or from German metaphysics. Fair play requires us to hear both sides. But these gentlemen cry out, "Not so. Hear only the accuser ; muzzle the defendant. Heap up all the testimony for the prosecution, and rule that for the defence out of court."

Want of space compels us to pass hurriedly over the only remaining Essay in this volume, on the Interpretation of Scripture, by Professor Jowett. It is chiefly an argumentative

restatement of the theory which this writer propounded, and applied at length, in his Commentary on some of the Epistles of St. Paul, that diversities of opinion on theological subjects have arisen mainly out of "the error of introducing into the interpretation of Scripture the notions of a later age." His opinion seems to be, (for it is nowhere declared with much distinctness,) that the teachings of our Saviour and his Apostles, being addressed primarily to a few small communities of believers in some of the Roman provinces about eighteen centuries ago, have comparatively little meaning or pertinency for civilized Christendom in these later times. "The temper of accommodation," which has led to diverse and contradictory interpretations of Scripture, shows itself, he says, "especially in two ways: first, in the attempt to adapt the truths of Scripture to the doctrines of the creed; secondly, in the adaptation of the precepts and maxims of Scripture to the language or practice of our own age." According to this view, to attribute our modern theological opinions to Christ and his Apostles is as great an anachronism as to attribute to them our system of philosophy.

This theory is evidently based upon a very low and rationalistic view of the origin of the Christian religion. It assumes in the outset, that the mission of our Saviour did not include any general revelation to all mankind, but only a special communication of certain truths which it particularly behooved one nation and one age to know, and from which subsequent generations can only glean a few isolated hints on matters pertinent to their own condition. Furthermore, this is as much a theory which will bias all interpretations of Scripture made by those who hold it, as if they came to an examination of the text with a predisposition to find in it every clause of the Nicene Creed and every one of the Thirty-nine Articles. Professor Jowett thinks he has found a specific wherewith to avoid the errors of all former commentators; but his own method turns out to be a mere repetition of the old blunder, which extracts from Scripture only fresh confirmations of preconceived errors.

"Hic liber est in quo quærit sua dogmata quisque;
Invenit et pariter dogmata quisque sua."

We here close our examination of this remarkable volume, — an examination protracted to a greater length, as many of our readers will doubtless think, than is justified either by the merits or the demerits of the work under review. But, as already remarked, the character and position of the writers may lend great significance to a book which would otherwise pass quietly and quickly to oblivion.

RESTORATION OF THE TEXT OF SHAKESPEARE.

FROM THE NORTH AMERICAN REVIEW FOR APRIL, 1854.¹

IT seems strange that the text of Shakespeare, which has been in existence less than two hundred and fifty years, should be far more uncertain and corrupt than that of the New Testament, now over eighteen centuries old, during nearly fifteen of which it existed only in manuscript. The industry of collators and commentators, indeed, has collected a formidable array of "various readings" in the Greek text of the Scriptures; but the number of these which have any good claim to be received, and which also seriously affect the sense, is so small, that they may almost be counted upon the fingers. With perhaps a dozen or twenty exceptions, the text of every verse in the New Testament may be said to be so far settled by the general consent of scholars, that any dispute as to its meaning must relate rather to the interpretation of the words than to any doubt respecting the words themselves. But in every one of Shakespeare's thirty-seven plays, there are probably a hundred readings still in dispute, a large proportion of which materially affect the meaning of the passages in which they occur. The publication of Mr. Collier's recent volume, which, according to some critics, has not settled a single point which was formerly in controversy, has given us about a thou-

¹ 1. *Notes and Emendations to the Text of SHAKESPEARE'S Plays, from Early Manuscript Corrections in a Copy of the Folio 1632, in the Possession of J. PAYNE COLLIER, Esq.* Second Edition, revised and enlarged. London, 1853.

2. *The Text of SHAKESPEARE vindicated from the Interpolations and Corruptions advocated by JOHN PAYNE COLLIER, Esq.* By SAMUEL WELLER SINGER. London, 1853.

3. *A Few Notes on SHAKESPEARE; with Occasional Remarks on the Emendations of the Manuscript Corrector in MR. COLLIER'S Copy of the Folio 1632.* By the REV. ALEXANDER DYCE. London, 1853.

sand new topics for the commentators to quarrel about. Many passages in the received text are also admitted to be hopelessly corrupt, as no consistent meaning can be given to them without doing violence to the language.

It would be a curious and important investigation to assign all the causes of this astonishing difference. But a full discussion of this subject would occupy a volume rather than an article; and our only purpose here is to speak briefly of the circumstances which have caused the text of our great dramatist to be so maimed and perverted, and have left so many passages to be settled by every reader according to his own taste and fancy.

The first of these causes may be found in the character of Shakespeare himself, — *in his unconsciousness of the greatness of his work, and his consequent indifference about its preservation.* He wrote, not for the press, but for the theatre; and the only success of any one of his plays which he seems to have cared for, was its effect in swelling the profits of the theatrical company in which he was both an actor and a shareholder. He did not superintend, and there is no reason to believe that he even authorized, the publication of one of his dramas. The interests of the company were best served by retaining them in manuscript and in their own possession, so as to prevent the representation of them in rival theatres. Thus, not even written copies of them were multiplied beyond the needs of this single band of performers. Surreptitious copies sometimes got out, and piratical booksellers published them, but generally in so imperfect and corrupt a state that the author might have been puzzled to recognize his own progeny. Yet Shakespeare seems to have given himself no further concern about the matter than was implied in taking better care of the manuscripts of his later plays, very few of which appeared in print before the collective edition of his works was published, in 1623, seven years after his death.

It may appear derogatory to the reputation of our great dramatist to assert that he wrote his plays for profit rather than fame. But we have no doubt that gain was his only motive. Of the publication of his “Poems,” indeed, — the *Venus* and *Adonis*, and the *Lucrece*, — he seems to have taken

more care, as if he looked to the good opinion that men might form of them. He certainly wrote dedications of them to the Earl of Southampton, and, as the tradition goes, received a splendid proof of this nobleman's munificence in return. He must therefore have prepared the manuscript for the press; and the text is accordingly found in tolerably good condition, having given but little trouble to the commentators. But the plays were written to please such audiences as thronged the rude theatres of that period, — cheap wooden structures, open to the sky at the place designed for the spectators, most of whom were also compelled to stand on the ground, either in front or at the sides. The applause of such a rabble was of little worth; all that was expected of them was their presence and the price of their admission. Provided the performances were attractive enough to allure a throng, the players cared for nothing further; and Shakespeare, who was one of the busiest among them, — at once actor, playwright, and shareholder, — was equally well satisfied. At times, the company was honored with a request, or a command rather, to perform at the houses of some of the nobility, or even at court; but this honor was prized not so much for its own sake, as for the protection which it insured them, and the consequent permission to continue their gainful efforts to please the populace.

The English drama, it must be remembered, was then in its infancy; it was hardly twenty years old when Shakespeare entered upon the profession. The Mysteries and Moralities which preceded it were not of much higher rank than the performances of Punch and Judy, or of the Doctor and his Merry-Andrew, at a much later day. The players seem, at first, to have been merely tolerated, not licensed. Under Edward VI., severe measures were taken to repress dramatic performances and the publication of plays. For two years, under Mary, they were totally inhibited. The government of Elizabeth discountenanced them at first, but by degrees they were permitted. In 1572, an act was passed to limit the number of itinerant performers, and it was renewed with additional severity in 1597. The Lord Mayor and Aldermen succeeded in excluding them from the precincts of the city, but

they found shelter in the liberties. Not till 1576 was any building set apart for theatrical representations ; previously, they had only temporary accommodations in structures designed for other purposes. The Puritanic feeling seems to have been aroused against them, while they appear to have found favor with the nobility, and some indulgence at court. Thus, the several associations of players called themselves the companies of the Queen, the Earls of Leicester, Derby, and Sussex, and the Lords Hunsdon and Strange. The connection thus implied was probably little more than nominal ; but the persecuted actors seem to have found some protection under it. Their chief dependence was on the strong attachment of the populace, with whom theatrical performances were as much in favor as bear-baiting, and but little more reputable. After Shakespeare had been on the stage about ten years, he was obliged to join his comrades in a very humble petition to the Privy Council, because some of the inhabitants of Blackfriars, where their playhouse was situated, had sent in a formal remonstrance, not only against the repairing and enlargement of the building, a work which had been already begun, but against any more dramatic performances. By the staid and respectable citizens of those days, the theatre was evidently regarded as a mere nuisance. The Council granted the petition of the actors so far as to allow the repairs to be completed, but forbade the contemplated enlargement of the house.

Little honor, but much profit, was to be expected from writing plays under these circumstances. Such was evidently Shakespeare's mode of looking at the matter ; and many of his characteristics as a dramatist may be partially accounted for by this explanation of his purpose. Hence the wildness, freedom, and sweetness of his style, uncurbed by critics' rules ; hence the mixture of tragedy and comedy, — the repetition of favorite characters, like Falstaff with his attendants, in several plays,¹ — the frequent introduction of a clown or jester,

¹ The title-pages of the surreptitious quarto editions of the plays which were published in Shakespeare's lifetime are very significant, for they show which characters in them had especially commended them to the favor of the populace. Thus, in 1598, we have an edition of " *The History of Henrie the Fourth ; with the battell at Shrewsburie, betweene the King and Lord Henry Percy, surnamed*

and of scraps of old ballads or songs ; hence the verbal quips and conceits, the presence of which we now regard as a blemish ; hence, also, the choice of the subjects of his plays, most of which are drawn from popular stories and legends, and from the history of England, which, even as late as Henry VIII., had already become legendary in the memory of the illiterate populace. We have no doubt that the Porter's speech in *Macbeth*, which has justly given so much offence, was written to please that least reputable portion of a theatrical audience, which is accommodated nowadays in the shilling gallery, and was designed to be omitted when the play was performed at court, or at a nobleman's house. When he wrote exclusively

Henrie Hotspur of the North. With the humorous conceits of Sir John Falstafffe." In 1600, we have "The Second Part of Henrie the fourth, continuing to his death and coronation of Henrie the fift. *With the humours of Sir John Falstaffe and swaggering Pistoll.*" The title-page of *Henry the Fifth*, published the same year, does not fail to specify "his battell fought at Agin Court in France. *Together with Auntient Pistoll.*" Still more promising in its adaptation to the tastes of the populace was the bill of fare for *The Merry Wives of Windsor*, which was first printed in 1602 : "A most pleasaunt and excellent conceited Comedie, of Syr John Falstaffe and the merrie Wives of Windsor. Entermixed with sundrie variable and pleasing humors, of Syr Hugh the Welch Knight, Justice Shallow, and his wise Cousin M. Slender. With the swaggering vaine of Auncient Pistoll and Corporall Nym." If this seems too much like a modern title-page to *Mother Goose*, it should be remembered that the populace are always children, and Shakespeare certainly treated them like children when catering for their tastes.

How he pressed English history into his service when laboring for the same end, may be further conjectured from the title-page of *Richard III.*, first published in 1597. "The Tragedy of King Richard the third. Containing, His treacherous plots against his brother Clarence ; the pittiefull murder of his innocent nephews ; his tyrannicall vsurpation : with the whole course of his detested life, and most deserved death." This reads like an extract from Dickens's "Child's History of England." To the vulgar, history, even that of their own country, is only a great story-book, not a whit more authentic, and certainly not more entertaining, than Shakespeare's plays or Scott's novels. We think that a sufficient argument might be founded on this very title-page against the whimsical Horace Walpole's "Historic Doubts" respecting Richard III. ; for it shows what was the universal impression of the great body of the illiterate English people respecting that sovereign only about a hundred years after his death, — a period surely not too long for a very accurate portraiture of him to be handed down in household tradition. The grandfathers, if not the fathers, of some of those who first saw Richard III. played at the Blackfriars Theatre, might have told their children how the crooked-backed tyrant looked just before the battle of Bosworth Field. There was much truth as well as point in the reply of a statesman, who, when challenged for an authority respecting an alleged fact in English history, boldly answered, "Shakespeare's Plays, — the only History of England I ever read."

for "gentle" readers, and designed to dedicate his performance to a nobleman, Shakespeare's tone and manner were very different. Witness either the *Venus and Adonis*, or the *Lucrece*, which are perfectly regular poems, very uniform in versification, and showing artistic unity in the plot and embellishments. The remark may appear a bold one, but we fully believe that Shakespeare no more thought of *publishing* his Plays, than the late Joe Grimaldi did of printing his Pantomimes. They were designed exclusively for the stage, and for the exclusive benefit of the theatrical company to which their author belonged. *They were not intended to add to his reputation, but to fill his purse*; and this purpose they accomplished admirably.

Shakespeare came up to London a penniless young man, his father being on the verge of bankruptcy, and a stain resting on his own character from the youthful indiscretions which had forced him into an ill-assorted marriage, at the age of eighteen, with a woman older than himself, and had made the most influential country gentleman in the neighborhood of his birth-place his implacable enemy. The only friends he could claim in the great metropolis were the players whose acquaintance he had made, when, in the course of an itinerant round of performances, they had visited his native village; and his only resource was to join their company, and make himself useful in the best way he could. His post at first was an humble one, for he was reckoned only as the twelfth in a company of sixteen members; but he rose rapidly. "In 1596, he was fifth in a company of eight members; and in 1603, he was second in a company of nine members." Only eleven years after his seemingly desperate attempt to seek his fortune in the metropolis, he had become rich enough to buy "New Place," a "great house" in his native town, and establish his family in it; and five years afterwards, he bought one hundred and seven acres of neighboring land, and attached it to his dwelling. In less than a twelvemonth, he purchased two other tenements in Stratford, so that he was now a considerable land-owner. After making a very cautious estimate, Mr. Collier considers £400 a year (equal to at least £1,600, or \$8,000, at the present value of money) the very lowest amount

at which his income can be reckoned in 1608. Ward, who was vicar of Stratford-upon-Avon less than fifty years after Shakespeare's death, says his income was so large "that he spent at the rate of £1,000 a year, as I have heard." At the early age of forty-eight, still in the prime of his physical and mental strength, but seemingly thinking that he was rich enough and had worked long enough, he dissolved his connection with the playhouse, quitted London, and went down to end his days in quiet and inglorious ease at his native place, apparently unconscious that he had done anything extraordinary. His Plays — the foundation upon which has since risen the towering fabric of a reputation "the greatest in our literature, the greatest in all literature" — were carelessly left behind in London, for his old associates to do with them whatsoever they would, — the larger number of them still existing only in manuscript, in carelessly written playhouse copies, — the others in print, indeed, but only in pirated, unfaithful, and curiously maimed and distorted editions.

And in manuscript, or in these "stolen and surreptitious copies, maimed and deformed by the frauds and stealths of injurious impostors, that exposed them," they remained till Shakespeare's death, and for seven years afterwards. He seems not to have bestowed another thought upon them after quitting London in 1612. He gave no direction about them in his will, whence we infer that his right of ownership in them had ceased, probably as soon as he sold out his other theatrical property. "Sundry manuscript plays" were perhaps enumerated in the inventory, together with "the wardrobe and properties of the same playhouse," estimated at £500, and four out of the twenty shares into which the joint stock was divided, when the whole pecuniary interest of William Shakespeare in the Blackfriars and Globe Theatres was disposed of to his old associates or successors. Prospero broke his staff, abjured his magic, and though he did not exactly "drown his book," he certainly took as little care of it as if he had thrown it overboard. Its new owners guarded their acquisition with more watchfulness than its author had shown. "With the single exception of *Othello*, which came out in quarto in 1622, no other new drama by Shakespeare appeared in a printed

form between 1609 and the date of the publication of the folio in 1623." The editors of this noted volume, the chief source of "the received text" of the plays, were Heminge and Condell, two of Shakespeare's old associates in the theatre. In dedicating it to the Earls of Pembroke and Montgomery, they represent themselves only as performing a pious "office to the dead, — to procure his Orphans," (as they appropriately term these abandoned children of his brain,) "Guardians; without ambition either of self-profit or fame: onely to keep the memory of so worthy a Friend and Fellow alive, as was our Shakespeare, by humble offer of his plays to your most noble patronage." This was a very proper tone for them to assume; but if they did not act for "self-profit," they certainly had no regard for the interest or rights of Shakespeare's heirs and natural representatives. Whatever profit may have accrued from the publication was shared between the printers and themselves.

Other playwrights seem to have been as careless as Shakespeare was about the fate *in print* of their dramatic performances, however anxious they may have been for success *on the stage*. If the play had been performed and applauded by the audience, and had thus put money in the author's purse, it had done its work; no gain in point of literary reputation was to be expected from printing what belonged to a department of literature that was held in so light esteem as stage-plays. Opinion on this point was just the reverse of what it is nowadays, when poets, like Byron, Coleridge, and Brown-ing, write dramas to be printed, but not to be performed. When "The Rape of Lucrece," by Thomas Heywood, was first printed, in 1608, its author took the unusual course of informing the public, in the Preface, that he had consented to its publication. Yet the impression is full of the grossest blunders, so that we may be sure he did not think it necessary even to see the proof-sheets. Mr. Collier says this edition, "with the author's *imprimatur*, is, we think, the worst specimen of typography that ever met our observation."

"We cannot wonder," adds Mr. Collier, "at the errors in plays surreptitiously procured and hastily printed, which was the case with many impressions of that day. Upon this point, Heywood is an unexceptionable witness; and he tells us of one of his dramas,

‘ that some by stenography drew
The plot, put in print, scarce one word true.’

Other dramatists make the same complaint; and there can be no doubt that it was the practice so to defraud authors and actors, and to palm wretchedly disfigured pieces upon the public as genuine and authentic works.”

Plays were falsely attributed to Shakespeare, and published with his name on the title-page, in which it is certain that he had had no hand whatever. Yet he seems to have taken no pains to expose the fraud, or to relieve himself from the imputation of having written what would surely have done him little credit. We ought not to wonder, then, that, when by the fraud of printers, and perhaps by the connivance of some of the inferior actors, very imperfect and disfigured copies of his dramas got abroad, and were published in quarto as his genuine productions, he did not disavow them, or complain of the blunders, as Heywood did, but allowed them to pass unnoticed. Sixteen of his plays were thus printed in quarto during his lifetime; and with the addition of *Othello*, which was thus printed in 1622, they formed the only means which the public had of judging his performances, except from their representation on the stage, till the appearance of the first folio edition of all his dramas, in 1623. Many of these plays in the quarto form passed through several editions, the later issue being sometimes a mere reprint of the former, and sometimes claiming to be “newly corrected, augmented, and amended.” With regard to the whole sixteen, we find no reason to doubt the positive assertion of Heminge and CondeU, the editors of the first folio, that they were “stolen and surreptitious copies, maimed and deformed by the frauds and stealths of injurious impostors.” Some of them do not contain much more than skeletons of the plays as they now exist, and are also deformed with blunders so gross that they cannot be accounted for except on the supposition, favored by the lines already quoted from Heywood, that they were copied out, in part at least, by stenography, from the recitation by the players; and, of course, that many passages were imperfectly heard and imperfectly preserved. Others may have been printed, in part, from imperfect playhouse copies, sur-

reptitiously obtained; that is, from transcripts of only one part, or of the speeches belonging to one personage in the drama, as they were copied out to be studied by individual performers. Copy for the printers may also have been obtained, or corrected, by inducing some of the actors to repeat their parts slowly at an alehouse or tavern, so that the words could be taken down. A very defective copy, obtained by the first of these methods, for the earliest edition in quarto, may have been subsequently "augmented and amended" by the other expedients, for the later issues. Mr. Charles Knight, a strenuous defender of the untenable hypothesis that Shakespeare himself authorized some of these quarto publications, and even furnished the manuscript for them, they being the first rude sketch of dramas which he afterwards greatly enlarged and improved, is obliged to confess that five out of the sixteen were certainly pirated and extremely defective editions.

We consider Knight's hypothesis untenable, because it is very unlikely that Shakespeare, who allowed the grandest productions of his mature genius, like *Macbeth*, the *Tempest*, *Othello*, *Julius Cæsar*, and many others, to remain in manuscript throughout his lifetime, and who left no directions about publishing them even in his will, should have voluntarily given to the world the first rude sketches of his earlier plays, — sketches which soon appeared to him so imperfect that they needed to be entirely rewritten before they could keep their place even upon the stage. Besides, it may reasonably be doubted whether Shakespeare ever retraced his steps, and took up again, for more elaborate and careful treatment, a subject which he had once dismissed as a drama fit for representation. He rewrote, indeed, the plays of others; but we have direct and unimpeachable evidence that he did not rewrite a speech, a line, or a word in a play of his own. More than any secular writer whom the world has known, he realized the theory of inspiration. Heminge and Condell, his associates and the editors of the first complete edition of his plays, inform us explicitly, that "*what he thought he uttered with that easiness that we have scarce received from him a blot in his papers.*" And Ben Jonson, also his intimate friend, says,

"I remember the players have often mentioned it as an honor to Shakespeare, that in his writing (whatsoever he penned) he never blotted out a line." Honest Ben directly adds, it is true, "My answer hath been, Would he had blotted a thousand!" But Shakespeare and he had very different notions of composition. His dramas were wrought out, as if he had been still piling bricks, with the sweat of his brow; while the thoughts of the gentle bard of Avon voluntarily "moved harmonious numbers." Jonson may have rewritten his plays, but Shakespeare never.

With regard to the quarto editions, whether they were all pirated or not, it is indisputable that they are lamentably maimed, botched, and defective. The first of them was *Romeo and Juliet*, which appeared in 1597, seven or eight years after Shakespeare began to write for the stage. Two years afterwards, a second edition of the same play appeared, claiming to be "newly corrected, augmented, and amended;" and in three subsequent issues, the "augmentations" had become so large, that while, in Stevens's reprint, the first edition occupies only *seventy-three* pages, the edition of 1609, reprinted in the same volume and same type, fills *ninety-nine* pages. Some of these augmentations, as Mr. Knight says, "are amongst the most masterly passages in the whole play;" but he forgets to add, that there are others which are not much needed, and are hardly worthy to be Shakespeare's *first* thought, much less his *second*. And even the more imaginative and exquisite lines which first appear in the later edition are, for the most part, but additions of considerable length to speeches and soliloquies, which, to an impatient copyist hastily taking down the words from the player's recital, might appear tedious and unnecessary for the full development of the plot or distinct portraiture of the characters. Thus, the long speech of the Friar, in the opening scene of the fourth act, is expanded from *thirteen* lines in the first publication, to *thirty-three* in the edition of 1609. It is far more likely that the copyist omitted the twenty lines in the former case, than that Shakespeare added them in the latter, as they are not wanted for the business of the plot, and are rather an impediment if the drama be considered as an *acting* one. Juliet's soliloquy, in the third scene

of the same act, was retrenched in a similar manner by the copyist for the first edition in quarto, after he had given all the necessary points in it to enable the reader to understand the progress of the incidents. Shakespeare did not rewrite his plays for the mere purpose of eking out long speeches with poetical tail-pieces. Passionate and wildly fanciful as the lines are, which were first printed in the later quarto, they are but the natural — the inevitable — completion of Juliet's thought as the mighty master conceived it.

Hamlet was first printed in quarto in 1603, and was reprinted in the same form the next year, with the following addition to the title-page: "newly imprinted, and *enlarged to almost as much againe as it was, according to the true and perfect Coppie.*" Here we have a very distinct assertion that the first quarto was *not* a true and perfect copy, and we know that it does not contain much more than half of the play as it now exists. Even Mr. Knight, therefore, is obliged to confess that it was piratical, and that it may have been "published in haste from a short-hand copy, taken from the mouths of the players;" though he still adheres to the hypothesis, in this case utterly indefensible, that the Hamlet enacted on the stage in or before 1603, from which this stolen short-hand copy was taken, was not the Hamlet which we now have, but only an immature first draft, — the earliest conception, and comparatively feeble expression, of what was afterwards wrought into a noble drama. In other words, he maintains that the deficiencies of the first quarto are attributable to the piratical copyist in some small degree indeed, but in great part to Shakespeare himself, who had already, and even some years before, written such plays as Henry IV., The Midsummer Night's Dream, King John, and The Merchant of Venice. He confesses that "all the *action* of the amended Hamlet is to be found in the first sketch;" so that Shakespeare rewrote the piece, in this instance as in the former one, merely for the purpose of lengthening out the speeches with poetical imaginings and philosophical aphorisms, leaving the plot and the characters just as they were before. Among the many puerile conceits and baseless suppositions of the commentators on Shakespeare, this hypothesis stands unmatched for absurdity.

We lay it down almost as an axiom, then, that whenever the early quarto editions fail to give, even in a perverted and misprinted condition, *the whole* text as we now possess it, the omissions and deficiencies are attributable solely to "the frauds and stealths of the injurious impostors" who published them. Several of these editions are confessedly complete, or nearly so, being probably derived from full playhouse copies that had been surreptitiously obtained, though the printers sadly marred and defaced them on the published pages. But others are so imperfect, that, if we depended for the text upon them alone, Shakespeare would seem to fall to the level of a second-rate dramatist. The first quarto of *Romeo and Juliet*, as we have seen, contains only about three fourths of the text; the first *Hamlet* only about half. The quarto *Henry V.* contains only about eighteen hundred lines, while the perfect text has thirty-five hundred. Malone justly says, "The quarto copy of this play is manifestly an imperfect transcript procured by some fraud, and not a first draught or hasty sketch of Shakespeare's. The choruses, which are wanting in it, and which must have been written in 1599, before the quarto was printed, prove this." The folio *Othello* has one hundred and sixty-three lines that are not in the quarto; and as the quarto of this play was published six years after Shakespeare's death, and only one year before the folio, Mr. Knight is obliged to abandon his hypothesis, and to acknowledge that the earlier edition was piratical and defective. *Richard II.* in the first quarto is defective by a whole scene, containing one hundred and fifty-four lines; and the *Second Part of Henry IV.*, as printed in the folio, has about one hundred and fifty lines that are not in the quarto. The quarto *Lear* omits only about fifty lines of the genuine text; but its surreptitious and defective origin is still more clearly indicated by another peculiarity, which we will allow Mr. Knight to describe.

"In the quarto text, the metrical arrangement is one mass of confusion. Speech after speech, and scene after scene, which in the genuine copy of the folio are metrically correct, are, in the quarto, either printed as prose, or the lines are so mixed together, without any apparent knowledge in the editor of the metrical laws by which they were constructed, that it would have been almost impossible, from this

text alone, to have reduced them to anything like the form in which they were written by the author. This circumstance appears to us conclusive, that *these quarto copies could not have been printed from the author's manuscript.*"

Summing up the whole matter, then, we may ask, What would be the state of Shakespeare's text, if we were obliged to depend solely upon the editions that were *published in his lifetime*? In the first place, twenty of his plays, many of which are among the noblest of his efforts, would be lost to us altogether. For the text of *The Tempest*, *As You Like It*, *Twelfth Night*, *Winter's Tale*, *King John*, *Julius Cæsar*, *Macbeth*, *Antony and Cleopatra*, *Cymbeline*, and eleven others, we are dependent *solely* on the folio of 1623. In the second place, the sixteen plays that were printed while their author was yet living are all piratical copies, obtained by stealth and by expedients obviously so incompetent to furnish an accurate copy, that hardly a line in them can safely be pronounced to exist just as Shakespeare wrote it, except upon internal evidence, or from its agreement with the copy of the same play which is found in the folio.

The next question that arises is, How perfect is the text of the plays in the folio of 1623? It is comparatively little to say, that Heminge and Condell, the editors of that volume, seem to have limited their efforts to merely supplying the printers with the playhouse manuscript copies, such as they then were, of all the dramas, and not to have troubled themselves at all about the correction of the press. Glaring typographical blunders abound in it; verse is printed as prose, and prose as verse; the punctuation throughout seems to have been made at haphazard; words are omitted, mistaken, and transposed; and sometimes the types appear to have been jumbled together into what bears hardly the semblance of a word. A more important consideration is the state of the manuscripts which were furnished to the printers. In 1612, Shakespeare ceased writing, gave up all connection with the theatre, and, of course, with his plays, and retired from London; and in 1616, he died. It follows, that all the twenty plays which were first printed in the folio had *existed in manuscript*, without being seen by their author, *for at least eleven years*, and

some of them for a much longer period. The *Two Gentlemen of Verona*, for instance, was probably written about 1592, and had therefore existed only in written copies for thirty-two years; *Measure for Measure* and the *Comedy of Errors* had thus existed for over twenty years. The *Globe Theatre* was burnt down in 1613, and it is more than probable that all of Shakespeare's original manuscripts, which had survived to that period, were then destroyed. The written copies were multiplied by careless transcribers for the use of the different performers, sometimes the whole being copied out, at other times, only the part of one of the personages in the drama. The prompter's books were probably complete, while those used by individual actors were more or less defective. Alterations and omissions were made from time to time, to adapt the performance to the varying exigencies of the theatre or the altered taste of the times. We have a slight but curious indication of the improved morality of the English populace, consequent upon the diffusion of Puritanic feelings and opinions under James I., in the fact, that not a few of the expressions in the play of *Henry IV.*, as they appear in the quartos, and which were thought profane, especially some of the ejaculations of Falstaff, were, in the folio, softened or expunged. Such expurgations, as they do not affect either the wit or the sense, are not to be regretted. But there were others which are more serious.

To shorten the performance, portions of long speeches, and even parts of the dialogue, were marked to be omitted by the actors in recitation; and when new copies came to be made, to replace those which had been lost or worn out, the copyist omitted to transcribe what had ceased to be acted. We have said that *Lear*, in the folio, contains about fifty lines that are not in the quarto; and we must now add, that the quarto has about two hundred and twenty-five lines, which are indisputably Shakespeare's, that are not in the folio. The omissions were probably made to shorten the performance, as, without them, *Lear* is the longest of the author's plays except *Hamlet*. The passages that were struck out are chiefly descriptive, everything being retained which was necessary to the progress of the action or to the development of character. But among

them are some of the most masterly passages in the drama, rich in the inexhaustible wealth of Shakespeare's imagination, and glowing with the fire of passion. Thus, the whole of the third scene of the fourth act, containing "a Gentleman's" inimitable description, given to Kent, of the manner in which Cordelia, in France, received the news of her father's maltreatment by her sisters, is left out in the folio, — perhaps for the very reason that the passage is so beautiful and striking, that it would infallibly have been marred in the delivery by such an actor as was thought competent to play the very inferior part of an anonymous gentleman. And yet that most unhappy editor, Mr. Knight, blindly and stubbornly supporting his hypothesis that the author revised and altered the text of his own dramas, strenuously maintains that the omission of this exquisite scene was Shakespeare's own act, — his only reason being that it is "purely descriptive;" and he "cannot avoid believing, that the poet sternly resolved to let the effect of this wonderful drama entirely depend upon its action"! We should not be surprised to hear that Mr. Knight "cannot avoid believing" in Ferdinand Mendez Pinto and Baron Münchhausen.

In Richard II., as it exists in the folio, we do not find about fifty lines that are printed in the quarto. To prove that they were omitted only to shorten the performance, and not because they contained blemishes or were supposed not to be genuine, we need only quote five of them, contained in Richard's speech when he banishes Bolingbroke: —

" And for we think the eagle-winged pride
Of sky-aspiring and ambitious thoughts,
With rival-hating envy, set you on
To wake our peace, which in our country's cradle
Draws the sweet infant breath of gentle sleep;" etc.

The earliest quarto edition of Hamlet, as we have noticed, is a very imperfect one; but the second quarto is comparatively complete, and even contains some two hundred lines which are not found in the folio. Among them is the magnificent passage (in a speech of Horatio, Act I. Scene I.,) describing the omens that preceded the assassination of "the mightiest Julius," — a passage very similar to a corresponding one in the play of Julius Cæsar. For example: —

“The graves stood tenantless, and the sheeted dead
Did squeak and gibber in the Roman streets.”

Still more important is the omission of the whole scene that contains the grand soliloquy of Hamlet, beginning, —

“How all occasions do inform against me,
And spur my dull revenge!”

The only motive for such abridgment must have been the desire to shorten the performance of this very long play.

We need not pursue this collation, having adduced sufficient proof that the folio, though much more trustworthy than the quartos, is far from giving us a text which can be relied upon for fulness and accuracy. Of course, we can trace the omissions of the folio only in those cases, (and in them but partially,) in which the plays had been previously published. How many and how important the abridgments are in the twenty plays that were first published in 1623, we cannot even conjecture. But judging from analogy, even from the few instances that have here been mentioned, it is safe to affirm that many of the most exquisite passages that Shakespeare ever wrote are lost to us forever.

There is but one other point to be noticed in this brief sketch of the condition of the text of our great dramatist. In reference to quite a number of plays, we are left in doubt whether they were written by Shakespeare or somebody else, or how great his share in them is, if any. This doubt exists with respect to five of the plays which are published as his in the folio of 1623, viz. the Three Parts of Henry VI., Titus Andronicus, and Pericles; and there are at least half a dozen other plays, which, save that they are not inserted in Heminge and Condell's edition, have about as good a claim to be considered his as the poorest of these five. In his capacity of playwright to the theatrical company to which he belonged, Shakespeare seems first to have exercised his 'prentice hand in altering and adapting to the purposes of the stage the productions, anonymous for the most part, of other dramatists. Before giving birth to any children of his own brain, he adopted many of the progeny of other people, and sent them forth to the world with a much fairer chance of life and prosperity than they had received from their natural parents. Some he

rewrote almost entirely ; but even in these, some uncharacteristic defect, some meanness of phrase or poverty of thought, betrays their doubtful origin, and proclaims them base-born. In others, his amending hand is but seldom visible, and the only wonder is why their parentage was ever ascribed to him. Very early in his career, a sour and envious brother dramatist complained bitterly of him, as “an upstart crow, beautified with our feathers,” as one of those “puppets that speak from our mouths, those anticks garnished in our feathers ;” and who, “being an absolute *Johannes Fac-totum*, is, in his own conceit, the only Shake-scene in a country.” The charge of plagiarism that is here insinuated is simply absurd ; for Shakespeare gave away his own property, instead of appropriating that of other people. He claimed nothing in respect to authorship, not even that which was wholly his own. He took up miserable and naked children, who were running parentless and shivering through the streets, and, after feeding and clothing them, sent them away again, without giving them his name, to be fathered by any one who might claim them. And yet, as Mr. Collier remarks, he was the “*Johannes Fac-totum*” of his theatrical associates. “He was an actor, and he was a writer of original plays, an adapter and improver of those already in existence, (some of them by Greene, Marlowe, Lodge, or Peele,) and no doubt he contributed prologues or epilogues, and inserted scenes, speeches, or passages on any temporary emergency.” Because he was so entirely careless about the credit which might accrue from such performances, what he thus wrote has irrecoverably perished. We know not how much the whole dramatic literature of the later part of Elizabeth’s reign, and the early part of James’s, owes to Shakespeare. Ben Jonson and Beaumont and Fletcher are certainly under heavy obligations to him.

The conclusion that must be drawn from this summary view of the evidence is, that the text of no eminent writer, whether ancient or modern, with perhaps the single exception of *Æschylus*, has come down to us in so uncertain, defective, and corrupt a condition as that of Shakespeare. The account now given will be found fruitful, if we mistake not, in important inferences respecting the proper criticism and emen-

dation of the text. And it also throws much light on the question which has been so fiercely mooted for the last year or two between Mr. Collier and the other commentators on Shakespeare.

Suppose an ancient playhouse copy should be discovered, containing thousands of manuscript emendations, which clear up many of the most obscure and corrupt places in the text, and which can be traced back, by very satisfactory evidence, to a period at least as early as the Revolution of 1688, and perhaps anterior even to the Restoration in 1660. Such a discovery, we might well imagine, would be hailed with great joy by the admirers of Shakespeare all over the civilized world. It may seem strange and almost unaccountable, then, that the professed critics, commentators, and editors of Shakespeare's text, who now form a numerous and very active class of literary men, both in England and this country, far from welcoming the discovery, should manifest extreme jealousy and irritation, and lend all their efforts towards discrediting the value of the newly found emendations, and impugning the character of him who brought them to light. If a bomb-shell had been fired into the critical camp, it could not have raised a greater commotion than the announcement of the manuscript corrections found in a copy of the folio of 1632. The press could not work fast enough to give vent to the indignation of the corps of commentators; "Remarks," "Observations," "Criticisms," "Vindications," etc., were published faster than any one could read or hardly count them. Those who could not find means to send forth a book or a pamphlet had recourse to the periodicals; and the articles upon the subject threatened to give the public a surfeit of Shakespearian literature. The whole hive of critics appear to have swarmed for the sole purpose of stinging Mr. Collier to death. In the preface to the second edition of his "Notes and Emendations," he remarks, with some pathos:—

"My accidental discovery of the corrected folio of 1632 has, I fear, tended to cool friendships of long standing; and individuals with whom I was formerly acquainted now look upon me as if I had done them some personal injury, which they could not overlook, and yet did not know how to revenge."

This onslaught of the whole body of commentators upon one of their fraternity seems to us not only inconsistent with fairness, but to look too much like an attempt to forestall public opinion, and to bear down reason and testimony by sheer vociferation. If we had the Irishman's disposition to be "anybody's customer in a row," we should take up the cudgels stoutly in Mr. Collier's defence, and think we could make out a fair case for him. But we have no taste for controversy, and have an especial dread of a battle among the commentators. Dr. Johnson long ago remarked, that the art of writing notes to Shakespeare is not of difficult attainment. "The work is performed," he said, "first by railing at the stupidity, negligence, ignorance, and asinine tastelessness of the former editors, and showing, from all that goes before, and all that follows, the inelegance and absurdity of the old reading; then by proposing something which, to superficial readers, would seem specious, but which the editor rejects with indignation; then by producing the true reading, with a long paraphrase, and concluding with loud acclamations on the discovery, and a sober wish for the advancement and prosperity of genuine criticism." If one would see this remark fully exemplified, let him glance at the several publications in which Messrs. Singer, Dyce, Knight, and Halliwell — all rival editors of Shakespeare — have assailed Mr. Collier's discovery. One important fact these gentlemen seem to have entirely lost sight of, — which is, that the question is not at all personal to Mr. Collier, that the emendations which he has lately published are not *his* emendations; that he has, in fact, played but a very humble part in the transaction, being only the medium through which they have been given to the public; and that the importance and interest of the communication which he has made are fully attested by this very pother among the commentators, — by the immense pains which the persons who seem to consider the text of Shakespeare as their peculiar property have taken to prove that it was absurd and valueless. Dr. Johnson tells us, that he "always suspected that the reading is right, which requires many words to prove it wrong." If this principle be a sound one, the correctness of the emendations which Mr. Collier has recently discovered and published is unquestionable.

As we do not intend to take any further notice of this discreditable personal controversy, it is but fair to Mr. Collier to say, that he seems to have acted throughout with commendable fairness, discretion, and modesty.¹ He has not put himself forward obtrusively, he has not defended *all* the emendations which he has discovered, and he has shown singular candor in renouncing, without a sigh, on the authority of the anonymous old corrector of the folio of 1632, many of the opinions which he had expressed and strenuously defended in his recent elaborate edition of Shakespeare. He has thus given his assailants an opportunity to triumph over him, — an opportunity which all of them, excepting Mr. Dyce, have been ungenerous enough to use to the full extent. But they have not been candid enough even to allude to the fact, that the annotated folio of 1632 has, in very many instances, convicted *them* of gross error in their former comments upon the text, and that, if the authority of the old annotator is admitted, their critical reputation will be seriously impaired, and their editions will become almost valueless. *Hinc illæ lacrymæ.*

We propose, in the first place, to give a brief view of the *external evidence* in the case, a point which has not yet received the attention that it deserves. Copies of the folio editions of Shakespeare, containing a few manuscript corrections of the text made by some unknown hand, are not rare or difficult to be had. Mr. Singer tells us he possesses two of them; the Earl of Ellesmere has a third; a fourth once belonged to the poet Southerne; and a fifth exists here in Boston, of which some account has been given in a pamphlet that is now before us. Such annotations have not usually been found to be either numerous or valuable. Accordingly, when Mr. Collier became the owner, about five years ago, of a much worn and defaced copy of the folio of 1632, on the cover of which was

¹ I am sorry to feel obliged to add that this commendation of Mr. Collier's conduct needs now to be materially qualified. From the evidence published two or three years after this article was written, it appears to be proved that he tampered unjustifiably with the MS. Annotator's work, and told different stories, not only about the corrections, but about the manner in which the volume came into his possession and its previous history. These painful disclosures do not seem materially to affect the credit or importance of the manuscript annotations themselves, but they certainly shake our confidence in Mr. Collier's conduct and character.

written "Thomas Perkins, his Booke," he hardly noticed its written marginal corrections, but threw the volume aside as being nearly valueless. After a while, his attention being again accidentally turned towards it, he was struck with the astonishing number and minuteness of the written annotations, and also with sundry plain indications that they had been made by some person connected with the stage, either as actor or manager, apparently for the purpose of creating a very accurate playhouse copy. He then attempted to trace the history of the volume, but at first was wholly unsuccessful in the endeavor. Before the second edition of his book was printed, however, he obtained some important information, which he details in the Preface.¹

Mr. Parry came forward and stated that he owned the volume about fifty years ago, and that it had been given to him, towards the close of the last century, by a connection of his family, Mr. George Gray, who was a collector of rare books. Mr. Parry described from memory both the exterior and interior of the book, its missing leaves and innumerable corrections, with such minuteness as to leave no doubt that it was the very copy which has since come into Mr. Collier's hands. It is not certainly known how Mr. Gray obtained it; but Mr. Parry had always understood and believed that he procured it from a place called Ufton Court, a few miles from his own residence, which had long been occupied by a Roman Catholic family of the name of Perkins. This family had been broken up, and their library sold, at the time when Mr. Gray became the purchaser of the volume. The family was of some note and antiquity, one member of it having married Arabella Fennor, the heroine of the "Rape of the Lock," and another, Francis Perkins, having died at Ufton Court in 1635, only three years after the publication of the folio which has been annotated. There was a distinguished actor on the stage, named Richard Perkins, who is known to have borne a part in the representation of Webster's "White Devil," before that drama was published in 1631. He was also in some measure a poet, as he wrote a copy of verses prefixed to Heywood's

¹ The account which follows in the next paragraph, it must now be admitted, is but partially trustworthy.

“Apology for Actors.” Mention has been found in print of a Richard Perkins, who, at an unknown date, married a Lady Mervin of Ufton Court; and Collier supposes it barely possible, that this was Richard Perkins the actor. This conjecture is rendered improbable, however, by the known fact, that the actor, after the playhouses were shut up by the Long Parliament, lived for some years at Clerkenwell, where he died not long before the Restoration. Still it is not unlikely that he was the manuscript annotator of the volume, and that it passed from him to his relative, Thomas Perkins, whose name is written on the cover, and who transmitted it to the family at Ufton Court. This conjecture seems the more plausible, as the cover on which the name is written does not seem to have been the original binding of the volume. Thomas Perkins may have prized the volume highly, on account of the marginal corrections made in it by a relative, and may therefore have given it a new binding and written his name upon it.

The character of the handwriting makes this hypothesis extremely probable. Mr. Collier states his belief, that the writing is not much later than the time when the volume came from the press (1632); and we are not aware that this statement has been impugned by any of his assailants among the commentators, some of whom must be very familiar with the chirography of the period in question. Indeed, one who has seen many specimens of the handwriting of the founders of New England, from 1630 to 1660, on turning to that in the fac-simile prefixed to Mr. Collier’s volume, will be struck with many obvious points of resemblance, such as the form of the long *s*, the peculiar shape of *e*, the prolongation of *h* below the line, &c. Mr. Collier also states very positively his present conviction, that the writing throughout the volume is by the same hand, though he was at first inclined to believe, from a difference in the ink employed on different pages, that two or more persons might have written in the volume; and we are inclined to give full credit to this statement, because he has shown frankness in mentioning several slight circumstances that might create a presumption against the authenticity of the manuscript readings.

But we do not need to press any doubtful circumstance into

the argument. It is enough that the chirography and other external evidence prove, beyond all question, that the marginal corrections were entered at least as early as the publication of the fourth folio, in 1685 ; other considerations will enable us to carry the date of them still farther back, — to a period antecedent to the issue of the third folio, in 1664. So it is enough to be assured that the emendations were made for theatrical purposes, and by some person connected with the stage, either as actor or manager, whether it were Richard Perkins, or one of his fellows or successors.

“ Many passages, in nearly all the plays, are struck out with a pen, as if for the purpose of shortening the performance ; and we need not feel much hesitation in coming to the conclusion, that these omissions had reference to the representation of the plays by some company about the date of the folio, 1632. To this fact we may add, that hundreds of stage directions have been inserted in manuscript, as if for the guidance and instruction of actors, in order that no mistake might be made in what is usually denominated stage-business. It is known that, in this respect, the old printed copies are very deficient ; and sometimes, the written additions of this kind seem even more frequent, and more explicit, than might be thought necessary. The erasures of passages and scenes are quite inconsistent with the notion that a new edition of the folio, 1632, was contemplated ; and how are they, and the new stage-directions, and ‘asides,’ to be accounted for, excepting on the supposition that the volume once belonged to a person interested in, or connected with, one of our early theatres ? The continuation of the corrections and emendations, in spite of and through the erasures, *may* show that they were done at a different time and by a different person ; but who shall say which was done first, or whether both were not, in fact, the work of the same hand ? ” — Collier’s *Notes and Emendations*.

In this last sentence, Mr. Collier seems to us to state quite too modestly or doubtfully his conviction, that the erasures and emendations of the erased passages were made by the same hand. The MS. Annotator, as we shall in future call the unknown author of the written emendations of the folio of 1632, appears to have amended the passages, because he had no doubt that they were genuine ; at the same time, *he crossed them out only to indicate that they were to be omitted in the performance*. He did precisely what was done by

the players in Shakespeare's own day, and *what no modern editor, critic, or commentator would have thought of doing*. We have already proved that many passages of considerable length, amounting to two hundred and fifty lines in a single play, had been struck out from the manuscript copies that were used by Heminge and Condell in editing the first folio edition of Shakespeare, — struck out, not from any doubt whether he wrote them, but only to shorten the time required for performing a long drama. An editor or annotator, who was preparing the copy, not for representation on the stage, but only to be published and read, in which case the length of a play is of no importance, would never have dreamed of taking such a liberty; and many persons, who have looked at the matter only superficially, have thought that, because the MS. Annotator used such indefensible license with the text, he could not have had warrant or authority for any part of his proceedings. On the contrary, the license thus taken by him affords good evidence in his favor, as it proves that he was an actor at an early day, when such freedom was deemed allowable, and one that relied chiefly upon old playhouse copies, instead of being an editor at a much later period, who relies only upon conjecture, and who may alter a word here or there, though he would never dare to erase a sentence.

Another fact casually mentioned respecting these erasures supports an important inference about their date, which seems to have escaped Mr. Collier's notice. All passages of an indecent, or needlessly licentious or profane, character are carefully struck out, evincing, says Mr. Collier, "the advance of a better or purer taste about the period when the emendator went over the volume." For instance, the Porter's speech in Macbeth, and portions of the dialogue between Hamlet and Ophelia, are erased. Now at what period was the prevailing taste so pure as to authorize, and even require, the omission of such passages? Not surely after the Restoration, when the gross licentiousness of the stage was countenanced by the still grosser licentiousness of the court, — when plays were publicly acted which are now deemed not fit to be read, — and when Dryden and Davenant polluted even Shakespeare by their stupidly obscene alterations of *The Tempest*. Was it

not rather in Charles the First's time, when, as we have seen, the diffusion of Puritanism compelled the editors of the first folio to strike out the profane ejaculations of Falstaff, and some minor indecencies, which had been tolerated in the publication of the earlier quartos ?

Again, it should be remembered that the Long Parliament, in September, 1642, ordered all the theatres to be closed ; (they had previously been shut up nearly a year, beginning in May, 1636, on account of the plague ;) and a more imperative and effectual ordinance was published in 1647, "for the better suppression of stage-plays, interludes, and common players." Rigid measures were adopted a year afterwards to enforce this act, and we know that it was enforced with great strictness until the eve of the Restoration. Not till 1658 did Davenant venture to occupy the Cockpit, Drury Lane, with a theatrical company ; and even then he called his representations *operas*, and did not grow bold enough to cause regular stage-plays to be performed till just before Charles II. landed in England. The theatres, then, were closed, and the actors' vocation was gone, for about sixteen years. It appears extremely probable that one of the principal performers or managers should have sought employment or diversion, during this period of enforced leisure, by correcting what was then the latest complete edition of Shakespeare, using for this purpose his own recollection of some of the leading parts, which he had committed to memory for the performance of them, and also all the now useless stores of the prompter's room, consisting of old manuscripts and marked copies of the quartos and of the first and second folios. There must have been very many transcripts, either partial or complete (for the use of a large theatrical company), of at least twenty of the plays, down to 1623, when the first folio was published ; and as this folio was a rather costly volume, instead of buying copies enough of it for the whole troop, it is most likely that they continued to rely, in part at least, on their old manuscripts ; and it is by no means extravagant to suppose that a number of those written copies, which either had been in frequent use, or had been laid aside and forgotten, continued in existence for at least twenty years, — that is, down to the

time when the theatres were shut up by the Long Parliament. The player, therefore, could have had no lack of materials to work with ; and the work which he performed was certainly respectable in amount. Mr. Collier tells us that there are over twenty thousand emendations ; and from various signs he concludes that the MS. Annotator must have been engaged several years in making them.

Is there any later period, during which a *player* (for we consider it to be demonstrated that the MS. Annotator was a player) was equally likely to have the requisite leisure, inclination, and materials for so great an undertaking? Can we find such a period in the reign of Charles II., when theatricals were in greater favor than they ever had been, or ever have been since, — when playhouses were numerous and thronged, — when we may reasonably suppose that all the histrionic talent in the kingdom was developed and in full employment, — but when Shakespeare was so little in repute, that his plays can hardly be said to have kept possession of the stage, except in the form of the tasteless, obscene, and barbarous alterations of them by Dryden, Davenant, and others? The same considerations apply, not indeed with equal, but with great force, against the hypothesis that the emendations were made under James II., William and Mary, or Anne ; but we need not here dwell upon this point, for, as we have said, the proof from other sources is complete, that they could not have been entered in the margins after 1685, the date of the fourth folio.

Observe, that we have as yet confined our attention entirely to the *external* evidence ; and the only point which this evidence has been cited to prove is, that the manuscript annotations in question were made in a copy of what was, when they were made, the *latest* complete edition of Shakespeare ; in other words, these annotations were entered before the publication of the third folio, in 1664. And we must avow our conviction, that the evidence cited is sufficient for the point to be proved ; for it may be doubted if the age of any undated ancient manuscript, either of the Scriptures or the Latin or Greek classics, is determined within one hundred years upon testimony as conclusive as that which has now been given.

From (1.) the ascertained history of the volume, considered in its connection with the Perkins family at Ufton Court; from (2.) the appearance of the chirography, when compared with other specimens of handwriting under Charles I.; from (3.) the nature of the passages marked to be omitted in the performance; and from (4.) the fact that the emendations were made by a player, and that the playhouses were shut up from 1642 to 1658, — we regard it as proved that *the MS. Annotator had finished his work in 1664*. In what follows, we shall proceed upon the supposition that this point is established.

In treating of the *internal* evidence in favor of the MS. Annotator's emendations, we wish, at first, to use only that portion of it which is conceded (to go for what it is worth) even by his most bitter and resolute assailants, — by those who are well acquainted with the subject, but who, at the same time, have the strongest motives for depreciating the value of Mr. Collier's discovery. Thus, even Mr. Singer, who is, beyond all question, the blindest and the most bigoted of the corps of editors and commentators who have attacked the recently discovered corrections, and who is enabled to deny the necessity for many of them only by putting forward, as undoubted readings, some very curious *conjectural* emendations of his own, — even Mr. Singer admits the authenticity of nearly all that portion of the MS. Annotator's labors, in which he has been *unconsciously* followed by most of the modern commentators, from Theobald downward. He thinks, however, to make this admission only a damaging one for Mr. Collier's cause, by a sneering remark in each case; such as, "This is another of the *undesigned* coincidences," or "This is a happy coincidence again." In other words, he insinuates that Mr. Collier *has committed forgery*; and he sometimes makes the insinuation a very open one. After the abundant proof now given of the antiquity of the manuscript corrections in Mr. Collier's book, this charge, which fails to be criminal only because it is so prodigiously absurd, may be safely said to be derogatory only to him who made it.

Mr. Singer is so delightfully silly as to assert, in plain language, that the old MS. Annotator has stolen *from him*, — from Mr. Singer, who published an edition of Shakespeare in

1826, and who, according to an advertisement carefully annexed to his present book, is about to issue another edition of the great dramatist, in which he hopes "to have the gratification of leaving the text of Shakespeare *in a much more satisfactory state* than I found it." But let us consider the alleged case of plagiarism from his former edition. In Love's Labour's Lost, we find, according to the old folios, the following line: —

"So [pertaunt like] would I o'ersway his state."

The critics have been greatly perplexed by the two words which we have inclosed in brackets; and the MS. Annotator tells us, what no reasonable being except a commentator will doubt, that the line should read, —

"So *potently* would I o'ersway his state."

Now for Mr. Singer.

"As I have never seen the corrector's book, I am obliged in self-defence to think it possible that he had seen mine; for in the edition of Shakespeare I gave in 1826, the line stands, —

'So *potent-like* would I o'ersway his state.'

And having no faith in coincidences, when they are so marvellously repeated hundreds of times, I feel constrained to draw this conclusion. Be it observed, however, that *potent-like* is a nearer approach to the old reading than *potently*, and *I cannot but wish the corrector had kept closer to my reading.*" — Singer's *Text vindicated*, p. 24.

Bravo! Mr. Singer. If your proposed new edition of Shakespeare should contain many such words as *potent-like*, it will be a *curious-like* production, and we will certainly buy a copy.

Mr. Dyce is an able and gentlemanly critic, all of whose suggestions are deserving of respect; and though laboring under the strong bias against the value of Mr. Collier's discovery which must affect all who have been, or are to be, editors of Shakespeare, or who have committed themselves by published criticisms upon the text, his concessions are comparatively frank and bountiful. He has reason, indeed, to favor the MS. Annotator, who sanctions several happy criticisms and conjectural emendations contained in his "Remarks on Collier's and Knight's Editions of Shakespeare," published in 1844. "My opinion is," says Mr. Dyce, "that while [Mr. Collier's volume]

abounds with alterations ignorant, tasteless, and wanton, it also occasionally presents corrections which require no authority to recommend them, because common sense declares them to be right."

But of all concessions made by opponents, we prefer to use those of an able critic, also an editor of Shakespeare, in "Putnam's Magazine" for October and November, 1853; because he has taken pains to make the expression of his opinion exact by classifying the emendations according to their relative merit, and numbering those in each class. Of the 1,303 modifications of the text by the MS. Annotator which are specified in the *first edition* of Mr. Collier's book, (we are using the *second edition*,) this critic tells us that 249 are what he calls "old;" — that is, a few of them may be found in the text of the first folio or the old quartos, but the greater part agree with the conjectural emendations that have been proposed by critics and commentators "during the last hundred and fifty years." Of these 249, he says, 29 have been rejected by previous editors, and he judges that 47 others are "inadmissible but plausible;" and the remaining 173 are already admitted and form part of the received text. We have here, then, the exact number of Mr. Singer's "remarkably happy coincidences." As this critic himself, after considerable wavering, places the date of the MS. Annotator's labors "not earlier than about 1670," and says elsewhere "that some of the [MS. corrections] are about a hundred and seventy-five years old, there can be no question," while the race of "critics and commentators" certainly did not begin to work till Rowe published his edition in 1709, and did not accomplish much before Theobald's "Shakespeare Restored" appeared in 1726, it follows, that the *MS. Annotator is entitled to the whole credit of the 173 admitted, and the 47 plausible, corrections, in the suggestion of which he preceded all other persons by at least a quarter of a century.* Observe further, that it is not merely the anonymous American critic who concedes that this large number of corrections is admissible, but the whole corps of critics and editors who have since adopted them have virtually made the same admission; and at least as much as this may be fairly inferred from the language already quoted from Singer and Dyce.

Again, of the 1,054 modifications of the received text which the critic in "Putnam's Magazine" declares are peculiar to the old MS. Annotator, he admits that 119 are "inadmissible but plausible," and 117 "*seem to be admissible corrections of passages which need correction*;" grudging language, which shows rather the unwillingness of the concession than any doubt as to its justice or propriety. Adding these to the former sums, we have a total of *one hundred and sixty-six plausible, and two hundred and ninety admitted, corrections of the text, the sole credit of which is due to the MS. Annotator.* What one editor, critic, or commentator can claim the original suggestion of an equal number of *conjectural* emendations, which even strongly prejudiced rivals and opponents admit as either plausible or unquestionably sound? Theobald, one of the earliest, and certainly the best of the whole corps, who, because he was the happiest in conjecture, was exalted by Pope to his painful preëminence in the "Dunciad," and has been regularly abused by every dunce of an editor and commentator since his own day, — Theobald probably cannot claim half as many. In our own times, critics and editors of Shakespeare very seldom aspire to the perilous honor of "conjectural emendations," but confine their labors almost entirely to what they call restoring the old, genuine text, and shovelling away the heap of absurdities which have been accumulated by the guesswork of former commentators; never failing, however, to pilfer slyly a large number of the best guesses from the mass, and to install them quietly in the text. Mr. Dyce, the ablest of their number, has proposed perhaps a score of new readings, most of which do honor to his taste and discernment; Mr. Singer, the feeblest of the set, may have published fifty guesses, of which it can only be said that the best are atrociously bad.

If the truth must be told, antiquarianism and bibliomania have spoiled our latest set of commentators. They seem more bent upon showing the extent of their collection of rare or unique books and pamphlets, — rare or unique because so worthless that no one for two or three centuries has ever thought of republishing them, — and the great compass of their reading in the most obscure and forgotten part of the litera-

ture of the Elizabethan period, than upon correcting or elucidating the text of Shakespeare. A disputed reading is with them only a pretext for a vast display of cumbrous and out-of-the-way erudition. We are sorry to add, that this seemingly harsh remark is especially applicable to Mr. Dyce, whose last published volume, of only 156 pages of large print, contains perhaps three or four hundred citations from at least half as many authors of the sixteenth or the early part of the seventeenth century, whom no one but a zealous antiquarian ever heard of. We open the book at random for an example, and find this line of Shakespeare, —

“Cleanse the stuffed bosom of that perilous stuff,”

the meaning of which appears too obvious to need any elucidation, *illustrated by thirty-three citations* from such authors or books as the following: “Tiptoft Earle of Worcester,” “The Lord Hastings,” “England’s Eliza,” A. Fraunce’s “Countess of Pembrokes Yuychurch,” 1591, “A Herrings Tayle,” 1598, Barnes’s “Divel’s Charter,” 1607, Armin’s “Valiant Welshman,” 1615, Hubert’s “Edward the Second,” 1629, “Fuimus Troes,” 1633, etc., etc. And the point to be proved by this barrow-load of stupid quotations is, that the writers of Shakespeare’s time sometimes indulged in such an iteration or jingle of words as “*stuffed bosom*” and “*perilous stuff*,” in the line which forms the text, — a point which might be fully and easily made out from Shakespeare himself. We do not forget that the world is indebted to antiquarianism for a very few needed illustrations of a few obscure expressions in our great dramatist. But the thing is carried altogether too far. Any tasteful student of Shakespeare will exclaim, Give me a bushel of those much-abused *conjectures*, generally rash, but sometimes striking and happy, of Theobald, Warburton, Hanmer, and others, rather than a cart-load of this conceited and fantastical learning. The best and most justifiable display of it, Farmer’s “Essay on the Learning of Shakespeare,” with all its wit and curious erudition, always seemed to us to *prove* little or nothing except the writer’s misplaced industry.

But to return from this digression. Our readers have probably anticipated the only remaining point in our argument,

though it is the one that constitutes the strength of the case in favor of the old MS. Annotator. This indefatigable corrector, — whose very name has perished, and whose manuscript labors, two centuries after his death, were picked up at a bookstall for thirty shillings, — but who, by the confession even of his jealous rivals and opponents, has distanced all competition in the race of *conjectural* emendation, and who has restored the true text of Shakespeare in hundreds of instances, while the best of his imitators was painfully amending a score of lines, — this miracle of critical ingenuity was a *poor player, who lived in an age (the first half of the seventeenth century) when conjectural emendation of an English author was an art as yet unheard of, and when the writings of our great dramatist were so little known or prized, that four rude and uncritical editions of them sufficed for a century.* In Charles the First's time, or under the Commonwealth, a Theobald would have been a miracle, and even a Singer would have seemed a curiosity. We can more easily imagine another Shakespeare to have arisen about 1640, than an *amender* of Shakespeare's text *by guesswork*; for the race of playwrights was then still in being, though that of critics and commentators was as yet unborn. The folio of 1632 was a mere reprint of that of 1623, and it added more errors of the press than it corrected. The edition of 1664 bears no marks of an editor's care, except the insertion of half a dozen apocryphal dramas; and that of 1685 is as carelessly printed as its predecessors. "Neither of the two latter folios is of the slightest authority in determining the text of Shakespeare." In urging this argument, we do not need to place any great stress upon the value or genuineness of the MS. Annotator's corrections, but only upon their extraordinary number and minuteness. In that uncritical age, that a person should have been willing to give the labor of several years to making twenty thousand alterations of Shakespeare's text *by mere conjecture*, is a story that outrages all the laws of probability. And when we add, that hundreds of these alterations are found equal or superior in merit to the best that have been produced by the taste, learning, and critical acumen of the next two centuries, the tale becomes absolutely incredible.

There is but one way of explaining the mystery. The old Annotator was no critic, no ingenious contriver of new readings, but simply a scribe, who worked from the materials in his possession as blindly as the compositor in a printing-office follows "the copy," whether that copy be sense or non-sense. He was, as we have suggested, a player out of employment, who sought to amuse his forced leisure by forming, from his own recollection of the plays in which he had often been an actor, and from the old manuscripts in the prompter's room, a text which should be more correct than the two wretchedly-printed folios, and which, by its numerous stage-directions and passages noted to be left out in the performance, should be a trustworthy and available guide when the playhouses should be opened again. *He proceeds like a proof-reader, not like a commentator* ; that is, he simply enters the correction in the margin, without adding a word of his own, by way of explanation, defence, or criticism. Commentators are not wont to be so concise. He often passes over obscure and corrupt passages, not having wherewithal to amend them ; and still oftener makes an admirable emendation of a line, which, in later times, no one even suspected of corruption. Sometimes he makes an explanation *unconsciously*, as when, intending only to enter a stage-direction, he pours daylight over something in the text, around which all subsequent editors have groped in darkness. We need only allude to his famous stage-direction in the *Tempest*, which shows the cause of that sudden somnolency of Miranda which has so often perplexed the reader. A modern emendator would surely have paused to clap his hands and glorify himself on such a discovery. The MS. Annotator is evidently unconscious that there is any difficulty to be overcome ; for always having seen the play rightly performed in this respect, every point appeared to him obvious and natural.

But the decisive consideration to prove that the MS. Annotator worked from authority, and not from conjecture, is, that he supplies omissions and makes corrections, which, as every reader of common sense can see, lie wholly *beyond the reach of conjectural emendation*. Here we must adduce instances, and we approach this part of our task with unfeigned

diffidence and reluctance. The maxim, *quot homines, tot sententiæ*, is nowhere so applicable as to proposed emendations of the text of Shakespeare. It is notorious that no two critics can be found to agree in opinion as to the merits or genuineness of any half-dozen proposed new readings. One is amused to find this remark so strikingly exemplified as it is among the several assailants of the MS. Annotator. Mr. Dyce affirms that to be certainly right which Mr. Singer says is undeniably wrong; and the critic in "Putnam's Magazine" adopts what both declare to be inadmissible. We are sorry not to be able to follow even Mr. Collier's lead in this matter; for we deem his selection of the best and least questionable emendations of the old Annotator often eminently unfortunate; and his argument in defence of those which may admit of doubt is frequently a lame one, and rather weakens his cause. Our own selection, in the judgment of many, may be doubly censurable; but when several instances are adduced, though one or two be condemned, the general verdict may be trusted as to the collective force of those which remain, so as to substantiate our conclusion that *all* of them *could not* have been framed by mere conjecture.

1. In the Winter's Tale, when Paulina "offers to draw the curtain," as a stage-direction of the MS. Annotator informs us, before the supposed statue of Hermione, Leontes exclaims, —

" Let be! let be!
Would I were dead, but that, methinks, already
I am but dead, stone looking upon stone.
What was he, that did make it?"

The whole line which we have italicized is supplied by the MS. Annotator, the passage having been printed in *all* editions without it. Before the discovery of his corrected copy of the folio of 1632, several editors had perceived that the sense was imperfect, and had placed a printer's *dash* after "already," at the end of the second line, as if Leontes in his ecstasy had left his sentence unfinished. The line now supplied seems to us so obviously Shakespearian in its turn of thought and expression, and tallies so precisely with the remainder of the speech, that it would almost argue insanity to doubt its genuineness. Mr.

Dyce says, "On first reading the new line, it appeared to me so exactly *in the style of Shakespeare*, that, like Mr. Collier, I felt 'thankful that it had been furnished.' But presently I found that it was *too Shakespearian*." His reason for thinking so is, that Leontes, only a few speeches before, has exclaimed, —

"I am ashamed: does not the stone rebuke me,
For being more stone than it?"

Standing like stone with thee!"

Mr. Dyce concludes, as he thinks Shakespeare never repeats himself, "that a reviser of the play, with an eye to the passage just cited, *ingeniously* constructed the said line to fill up a supposed lacuna." With all submission, we must prefer Mr. Dyce's *first* thoughts to his second; for in all our acquaintance with critics and commentators, we have not yet found one who appears "ingenious" enough, with so slender a clue, to invent so Shakespearian a line as the one here given by the MS. Annotator. Whatever may be said of the similarity in the thought, the similarity in the expression is confined to the one word *stone*; and as this is thrice repeated in the single speech cited by Mr. Dyce, we are not surprised to find, several speeches afterwards, that it is repeated twice more, this striking addition being also made to the thought, "*stone looking upon stone*." Let him who doubts the genuineness of this addition to the received text, invent an equally good one. Fortunately we are enabled to judge, as one of them has actually made the experiment. Mr. Singer says, "If a line were wanting, and that is more than doubtful, *a much better one* has been suggested: —

"But that, methinks, already
I am in heaven, and looking on an angel."

Oh, Mr. Singer!

2. In the Second Part of Henry IV., Lord Bardolph draws a parallel between the building of a house and the carrying on of a war, and takes the case of a man attempting to build, and finding out by woful experience that he has not counted the cost. In this case, as in every other, we italicize what is supplied in writing by the MS. Annotator, and include in angular brackets that portion of the received text which he

has struck out. Read the passage, omitting all that is in italics, and you have the received text; read it again, omitting all that is in brackets, and you have the speech as amended by the MS. Annotator.

“ What do we then, but draw anew the model
 In fewer offices ; or at [least] *last* desist
 To build at all ? Much more, in this great work,
 (Which is, almost, to pluck a kingdom down,
 And set another up,) should we survey
 The plot [of], *the* situation, and the model ;
 [Consent] *Consult* upon a sure foundation ;
 Question surveyors ; know our own estate,
 How able such a work to undergo.
A careful leader sums what force he brings
 To weigh against his opposite ; or else
 We fortify [in] *on* paper, and in figures,” etc.

We say nothing of the minor verbal emendations of this passage, though without them a portion of it is unintelligible, and with them the meaning is clear and consistent. But the whole line which is supplied by the MS. Annotator is so obviously necessary to make out the sense, (the words, “ To weigh against *his* opposite,” having otherwise nothing to correspond to them, and “ his ” no antecedent,) and is so clearly in the manner of Shakespeare, that we have not the slightest doubt that it came from his pen.

Neither Mr. Dyce nor Mr. Singer says one word about this emendation, and considering its irresistible claims, their silence does not appear very ingenuous. The critic in “ Putnam’s Magazine ” also passes it over without direct notice, having previously made up his mind against the whole class of emendations to which it belongs, — those, namely, in which *entire lines are supplied* to complete a deficient sense. “ No matter,” he says, “ how great the deficiency which they attempt to supply, or how remarkable their intrinsic merits ; ” they must be rejected, because “ they are not emendations of typographical blunders, not the correction of that which is ill done, but the doing of that which was left undone ; ” and he adds, very rightly, that “ the interpolation of an entire line by one man is as little justifiable as the interpolation of an entire scene by another.”¹ Here the critic has in view the very consideration

¹ The reason given by this critic for affirming “ that the corrections in Mr. Col-

on which our present argument is based, though he makes a most illogical use of it. He sees clearly, as every one must do, that *entire lines cannot be supplied by conjecture* ; and having previously made up his mind that the MS. Annotator *had nothing but conjecture to depend upon*, he decides that the supplied lines must be rejected, *however great the internal evidence in their favor*. But we argue thus : The internal evidence, that the two entire lines supplied by the MS. Annotator could not have been written by a commentator, is irresistible ; we grant that they could not have been supplied by conjecture ; therefore, we have conclusive proof that the MS. Annotator could not have supplied them by conjecture, but must have worked with a manuscript authority before him.

3. We have not yet done with the entire lines supplied by the MS. Annotator. Witness the following, which is added to a speech of Sir Eglamour, in the fourth act of *The Two Gentlemen of Verona* : —

“ Madam, I pity much your grievances,
And the most true affections that you bear,
Which since I know they virtuously are placed,
I give consent to go along with you.”

Omit the line in italics, and Sir Eglamour is made to say, that, as he knows Silvia's “*grievances*” “*virtuously are placed*,” he consents to go along with her to Mantua, — which is nonsense. The line supplied furnishes just the meaning that is needed, and tallies perfectly with Silvia's preceding

lier's folio could not possibly have been made before 1662, when Davenant introduced the first scenery ever exhibited upon a public stage in England,” is very curious. According to the stage directions of the MS. Annotator for *Love's Labour's Lost*, Biron “*gets him in a tree*,” and makes some remarks while “*in the tree*.” The critic argues that such stage directions could not have been put forth before Davenant's stage improvement was made. Why not argue, also, that the whole first scene of *The Tempest* is spurious because it is supposed to take place on board a ship ? or that many scenes in *As You Like It* ought to be rejected, because they take place amid a whole forest of trees ? It is evident that Biron is directed to speak “*in a tree*,” just as Juliet makes love in “*a balcony*,” — not that either the tree or the balcony was real, or even a good imitation of the reality ; but the actor was perched on a stand a few feet above the stage, with a partial covering in front, and the spectators' imaginations did the rest. We may remark, in passing, that the stage direction just cited, “*He gets him in a tree*,” is a phrase that we should not expect to find after the Restoration, and from a modern fashioner of conjectural readings, it would be simply ludicrous. The phrase is Elizabethan, or certainly not later than Charles I.

speech ; and though it is not so obviously Shakespearian in its turn as the two previously cited, it is far above the power of any modern commentator to forge, and we therefore incorporate it without hesitation into the mighty master's text.

4. Again, in the third act of *Coriolanus*, Volumnia says,

“ Pray be counselled :

I have a heart as little apt as yours

To brook control without the use of anger ;

But yet a brain, that leads my use of anger

To better vantage.”

Without the line in italics, the sense is evidently incomplete, as there is nothing to which Volumnia's heart is “ little apt ; ” and we can plainly see how, in the careless printing of the first folio, the line was accidentally omitted. The next line also ending with the same words, “ use of anger,” the printer's eye was caught by them, and he did not observe that they were repeated. The omission was supplied by the MS. Annotator, and who can believe that he, or any other man, was capable of forging such a line ?

5. Lines in prose, as well as in verse, are sometimes omitted in the first folio. Thus, in the second act of *The Twelfth Night*, a speech of Sir Andrew Aguecheek and the Clown's reply are printed as follows, the two lines just filling up the breadth of one of the two columns that constitute the folio page : —

“ *An.* There's a tetrill of me too ; if one knight give a

“ *Clo.* Would you have a love song, or a song of good life ? ”

Here it is palpable that, by a printer's blunder, a portion of Sir Andrew's remark has dropped out. The MS. Annotator thus supplies the omission : —

“ *Sir Toby.* Come on ; there is sixpence for you ; let's have a song.

“ *Sir An.* There is a tetrill of me too ; if one knight give away sixpence, so will I give another : go to, a song.

“ *Clown.* Would you have a love song or a song of good life ? ”

He who was capable of inventing the words in italics, so perfectly in keeping with Sir Andrew's character and manner, might have written without effort the whole comic portion of *The Twelfth Night*. In mercy to Mr. Singer, we forbear to quote his comment, and the way in which *he* proposes to fill up the gap.

6. As a specimen of the careless way in which the first folio was printed, we will now give a passage from All's Well that ends Well (Act I. Scene 3), precisely as it stands in that important volume.

“ Clo. Was this faire face the cause, quoth she, Why the Grecians sacked <i>Troy</i>, Fond done, done, fond was this King <i>Priams</i> ioy, With that she sighed as she stood, <i>bis</i> And gaue this sentence then, among nine bad if one be good, among nine bad if one be good, there's yet one good in ten “ Cou. What, one good in tenne? you corrupt the song sirra. “ Clo. One good woman in ten Madam, which is a pu- rifying ath' song: would God would serue the world so all the yeere, weed find no fault with the tithe woman if I were the Parson, one in ten quoth a? and wee might haue a good woman borne but ore euerie blazing starre, or at an earthquake, 'twould mend the Latteriewell,” etc.	“ Clo. Was this faire face the cause, quoth she, Why the Grecians sacked <i>Troy</i>, Fond done, done, fond was this King <i>Priams</i> ioy, With that she sighed as she stood, <i>bis</i> And gaue this sentence then, among nine bad if one be good, among nine bad if one be good, there's yet one good in ten “ Cou. What, one good in tenne? you corrupt the song sirra. “ Clo. One good woman in ten Madam, which is a pu- rifying ath' song: would God would serue the world so all the yeere, weed find no fault with the tithe woman if I were the Parson, one in ten quoth a? and wee might haue a good woman borne but ore euerie blazing starre, or at an earthquake, 'twould mend the Latteriewell,” etc.
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We will now print the extract as the lines are arranged by the modern editors, and with the alterations and additions of the MS. Annotator in italics.

“ Clo. Was this fair face the cause, quoth she,
Why the Grecians sacked Troy?
Fond done, done fond, *good sooth it was*;
Was this King Priam's joy?
With that she sighed as she stood,
With that she sighed as she stood,
And gave this sentence then;
Among nine bad if one be good,
Among nine bad if one be good,
There's yet one good in ten.

“ Count. What, one good in ten? you corrupt the song, sirrah.

“ Clo. One good woman in ten, madam; which is a purifying o' the song, and mending o' the sex. Would God would serve the world so all the year! we'd find no fault with the tithe-woman, if I were the parson. One in ten, quotha! An we might have a good woman born — but *one* — every blazing star, or at an earthquake, 't would mend the lottery well,” etc.

The MS. Annotator certainly did not correct this passage and fill up the gaps in it *by conjecture*, though he might have done it by inspiration, or on the authority of a manuscript.

7. In Much Ado about Nothing (Act II. Scene 1), Beatrice compares “wooning, wedding, and repenting” to “a Scotch jig, a measure, and a cinque pace,” thus: —

"The first suit is hot and hasty, like a Scotch jig, and full as fantastical : the wedding, mannerly, modest, as a measure full of state and ancientry ; and then comes repentance, and with his bad legs falls into the cinque pace faster and faster, 'till he sink *a pace* into his grave."

Without the words in italics, no one would have supposed that the passage needed any emendation ; but the MS. Annotator supplies them, and thus preserves a pun, very much in Shakespeare's manner, in which consists all the drollery of the latter part of the description.

8. In *The Merry Wives of Windsor* (Act II. Scene 1), the Host exclaims, at the end of a short speech, according to the first folio, "Will you go, An-heires?" The types were evidently jumbled together here, into one of those inexplicable compounds which are sometimes found, as all correctors of the press will testify, on the *first proofs* at a printing-office ; and all the commentators have been greatly puzzled to know what "An-heires" means. "Warburton suggested '*heris*, the old Scotch word for master' ; Steevens, *hearts* ; Malone, *hear us* ; Boaden, *cavaliers*, &c." The MS. Annotator tells us to read, "Will you go *on, here?*" The Host, being in a hurry, exhorts them again, just afterwards, "Here, boys, here, here! shall we wag?" Yet Mr. Dyce is dissatisfied with this simple and satisfactory emendation, and, in his usual manner, on the strength of an expression found in an old play printed in 1647, wishes us to read, "Will you go on, *Mynheers?*" This is almost as bad as Mr. Singer's conjectures. We have quoted it only to show how completely the best critics are at fault, when they have nothing but internal evidence to depend upon, in the case of a passage that is obviously corrupt.

We have not space for more instances, and more are not needed, though we could select from Mr. Collier's volume at least one hundred emendations, that have nearly as good a claim to a place in the text (judging from internal evidence alone) as the eight here mentioned. Individual readers might object to two or three out of the number ; but that *the whole eight should have been invented, or made up by mere conjecture, by a poor player in the earlier part of the seventeenth century*, is a supposition so extravagant and incredible, that it cannot

be entertained for a moment. As the examples given are taken from eight different plays, the proof seems to be conclusive that the MS. Annotator possessed authoritative materials for the emendation of a correspondingly large portion of Shakespeare's text; and by enlarging the selection of instances, the same argument might be made to apply, with nearly equal force, to at least four fifths of the plays that are included in the second folio. The Annotator must have had some means, beyond his own ingenuity, for amending at least thirty of the plays; though it does not follow that his means were adequate to the *entire* correction of any one. Probably he had imperfect manuscripts, — transcripts of one or more of the sets of speeches to be spoken by each performer at the representation of one of the dramas. And these manuscripts themselves, having been copied and recopied many times, must have contained many errors of transcription, and probably, also, some alterations designedly made by the performers for various purposes; as we know that they softened Falstaff's profane ejaculations. We can thus account for a number of obviously corrupt passages, of which the MS. Annotator takes no notice, and also for certain alterations proposed by him that are manifestly indefensible. His authority, at the best, is no higher than that of the first folio, which we know to have been printed in great part from playhouse manuscripts; though the internal evidence shows that he made a far more careful use of his manuscripts than the printers of that folio did of theirs. But his authority, though not superior, and perhaps not equal, to that of the first complete edition in print, *is still an authority of the same class*. He gives us (to adopt a principle of classification which Griesbach has made familiar in reference to the manuscripts of the New Testament) a new *recension* of the text, made from manuscripts of equal antiquity with those used in printing the first folio, though probably not so complete, — that is, not covering an equally large portion of the text. This conclusion is again rendered extremely probable by the fact, that, in several instances, the reading adopted by the MS. Annotator coincides with that of the old quartos, while it differs from that of the first folio.

The conclusion of the whole matter, according to the view here taken of it, is, that the text for future editions of Shakespeare should be made up from collation of the three leading authorities, — the old quartos, the first folio, and the corrections of the MS. Annotator; — not omitting any entire line found in either of them (as nothing, which probably came from Shakespeare's own hand, should be lost); and where the three vary, the choice between them must be decided by internal evidence alone. These three, and these three only, are authoritative sources of the text; all else depends on mere taste and conjecture.

The principle thus stated enables us to obviate at once the only objection of any importance that has been made to the readings of the MS. Annotator. It is objected that many of these readings are obviously inadmissible, and (so far as internal evidence can prove anything) cannot have formed part of Shakespeare's own text. We admit it; but we must remind the objectors, that *precisely the same thing can be said of the first folio*. Hundreds, perhaps we might say thousands, of readings in that edition are now rejected by almost unanimous consent, the passages containing them being obviously corrupt. The folio also omits a great number of entire lines (we have pointed out four or five plays in which about six hundred are left out) which are indisputably genuine. This objection, consequently, to the labors of the MS. Annotator, falls entirely to the ground; it is of no weight whatever.

It may be said, however, that the number of inadmissible readings proposed by him bears so large a proportion to those which may be allowed to be correct, as to discredit his whole performance. If we were compelled to accept, for instance, the computation made by the critic in "Putnam's Magazine," and allow, that, out of one thousand three hundred and three proposed modifications of the text, only two hundred and ninety are good, and one hundred and sixty-six more are plausible, there would be some force in this argument. But this critic, as well as all the English assailants of the newly discovered corrections, proceeds upon the assumption that the MS. Annotator worked by conjecture alone, without any authority whatever; and this assumption being now turned the other way,

the internal evidence assumes an entirely new aspect. Thus, to borrow the instance selected by Mr. Collier, if the old reading (with which all minds had become familiar) of Lady Macbeth's appalling invocation, had been as follows : —

“ Come, thick night,
And pall thee in the dunnest smoke of hell,
That my keen knife see not the wound it makes,
Nor heaven peep through the *blankness* of the dark,
To cry, ‘ Hold, Hold ! ’ ” —

what would be said of any critic who should advise us to substitute *blanket* instead of *blankness*? He would certainly be placed, on the scale of conjectural emendations, lower even than Mr. Singer. Let all the corrections proposed in Mr. Collier's volume be tried in this manner; that is, suppose that they constitute the old and received text, and let what are now the old readings be regarded as conjectural emendations; and we doubt not that the general voice would pronounce in favor of at least five sixths of the corrections now recently brought to light. The corps of critics, commentators, and editors would probably do battle in favor of the whole of them. But this mode of trial, as Mr. Collier very candidly admits, would not be a fair one, the prejudice in favor of the old reading being strong enough to outweigh almost any amount of internal evidence. The only method of weighing the two sets of readings fairly against each other, on their intrinsic merits alone, would be to adopt the principle which we have now laid down, and to suppose that they are of *equal* external authority; to suppose, for example, that they were both first published in the same year, from two equal and independent sets of manuscripts. Tested in this manner, it is very safe to say that at least a majority of the MS. Annotator's readings would be preferred.

“ It cannot be surprising,” says Mr. Collier, “ that individuals who, for many years, have been accustomed to see passages, even such as are avowedly corrupt, repeated in every edition, and to hear them recited by the best performers of our own or other days, should at first feel repugnance to proposed alterations, however excellent.” It should be noted, also, that this prepossession attaches itself most strongly to those expressions which are salient on account of their rarity, their obscurity, or

their doubtful construction, and which, for this very reason, are most likely to be corrupt. These are peculiarities in the text, —marked passages, as it were, which have attracted the attention and exercised the ingenuity of all loving readers of the great dramatist, each one of whom has probably selected for them a pet explanation of his own, and they have thus naturally come to be regarded as peculiarly Shakespearian. Weighty and palpable must be the evidence that would displace them. Thus, when Othello exclaims,

“Put out the light, and then put out the light;”

when Macbeth soliloquizes,

“If ’t were done, when ’t is done, then ’t were well
It were done quickly;”

when Gadshill describes those who are about to rob on the highway with him as “burgomasters and great *oneyers* ;” when Dogberry speaks of himself as “a fellow that hath had *losses*,” — the expressions have become consecrated, as it were, in the mind of every loving admirer of Shakespeare, and he will resist to the death any change in them. A similar feeling (it would be too harsh to call it a *prejudice*) exists with regard to many expressions in the common English version of the Scriptures, which might be profitably amended, as they are either ungrammatical, incorrect, or obsolete, if the change did not disturb, in the minds of millions, associations which ought to be held sacred. It would be unquestionably more correct to say, “Our Father *who* art,” than “Our Father *which* art” ; and when we read, “Jesus *prevented* him, saying,” we know that the expression in this sense is obsolete, and may even convey a wrong idea to common readers. Yet what person of taste and devotion would like to hear these expressions altered in reading from the pulpit ? We need not show how this feeling has operated to prevent the emendations of the MS. Annotator from being fairly weighed on their intrinsic merits. We respect the feeling itself, as it springs from an amiable and honorable source. But it should not blind our eyes to the weight of testimony.

The most common mode of attacking Mr. Collier’s volume has been to select the weakest and least defensible emendations,

or those which most strongly counteract the prepossession just described, and then to appeal vehemently to the common feeling of reverence for Shakespeare, which should guard *his* text from tasteless *conjectural* alteration. In the first place, this reasoning is unfair. Let the best conjectural emendator — let Theobald himself — be tried by the test of the poorest and least probable changes that he has proposed, and his reputation as a critic would instantly disappear. Secondly, the reasoning contains a gross *petitio principii*; it takes for granted the two chief points at issue, namely, that the first folio, in the case of the very words in question, does contain *the* text of Shakespeare, and that the corrections of the MS. Annotator are mere guesswork. This gross fallacy, as we have seen, is the sole reason assigned by the New York critic for not even taking into consideration those cases in which the MS. Annotator professes to have restored an entire line to the text.

The most common complaint against these emendations is, that they often clear up obscurity at the expense of reducing a poetical expression to a prosaic one, and frequently restore rhythm and metre to lines which, in the received text, were glaringly deficient in one or both. Now certain assumptions form the groundwork of this complaint, which we are by no means inclined to admit. We deny that Shakespeare is generally, or even frequently, an obscure writer, or that he is a lawless versifier. The obscurity of a passage, we hold, is at least *primâ facie* evidence that it is corrupt. On this point, we are sorry to be obliged to differ from so able and judicious a critic as Mr. Hallam.

“It is impossible to deny,” he says, “that innumerable lines in Shakespeare were not more intelligible in his time than they are at present. Much of this may be forgiven, or rather is so incorporated with the strength of his reason and fancy, that we love it as the proper body of Shakespeare’s soul. Still can we justify the very numerous passages which yield to no interpretation, knots which are never unloosed, which conjecture does but cut, or even those which, if they may at last be understood, keep the attention in perplexity till the first emotion has passed away? . . . We learn Shakespeare, in fact, as we learn a language, or as we read a difficult passage in Greek, with the eye glancing on the commentary; and it is only after much study

that we come to forget a part, it can be but a part, of the perplexities he has caused us." — *Literature of Europe*, Vol. III. p. 92.

With all submission, we think that this criticism was written without that careful study of the history of the text, which discloses the astonishing extent, and the causes, of its corruption. An obscure writer is habitually and continually obscure, the defect arising from some peculiarity in his habits of thought, or from his imperfect capacity of expression. But Shakespeare is obscure only by fits and starts. Take some of his plays the text of which is least imperfect, such as *Richard II.*, *Romeo and Juliet*, or *King John*; and we may read scene after scene without finding a sentence which would present a difficulty to a child's understanding. Then suddenly comes a passage, most frequently a single sentence, which is as dark as Erebus. Take the long passages which are most frequently quoted and recited, — the affecting scene between Prince Arthur and Hubert, the quarrel of Brutus and Cassius, the long speeches in *Julius Cæsar*, several of the soliloquies in *Macbeth* and *Hamlet*, — and omit perhaps half a dozen lines in each, and the rest is as lucid as a child's story-book. All experience goes to show, when we know the circumstances of the case, that the lack of perspicuity is a persistent and inbred characteristic of style that constantly betrays itself. An obscure writer, like Mr. Browning, is obscure upon system, as it were, never being perspicuous but by accident. Just the reverse is true of Shakespeare.

Again, an incomplete command of language is the most frequent cause of a labored and perplexed style. But among all the characteristics of the great dramatist, we know hardly of one so marvellous as his absolute mastery of expression. Language is his tricky spirit, as Ariel was to Prospero, and does his "strong bidding" gently,

"be't to fly,
To swim, to dive into the fire, to ride
On the curled clouds."

For any purpose, he can "task Ariel and all his quality." Shakespeare wrote for the populace, and it was his business to make himself intelligible to the populace. And this he accomplishes without effort, without painfully ransacking the vocab-

ulary, or mutilating the thought in its expression. The plainest and most familiar terms, the short and pithy Anglo-Saxon phrases in which common men talk on common occasions, serve to exhibit all the riches of his imagination and the depths of his philosophy. With the ordinary coin of the market-place, he pays the ransom of kings. Take the most thoughtful and imaginative musings, — the remonstrance of Isabella to Angelo against the abuse of power, Portia's eulogy on mercy, Hamlet's soliloquy on suicide, Lear's ravings on the injustice of this world, Claudio's ecstasy of fright at the near prospect of death, and a thousand others, — dissect the language (if you can have the heart to do it), and note the homeliness of the words and phrases, when they are taken singly. At times, again, Shakespeare seems to play with language ; he runs in sport over the whole gamut of expression, but with the assured touch of a master hand sweeping the keys. Hamlet, who has just been using the vocabulary of the street and the gutter, begins to tell the bewildered Rosencrantz and Guildenstern, —

“ Indeed, it goes so heavily with my disposition, that this goodly frame, the earth, seems to me a steril promontory ; *this most excellent canopy, the air*, — look you ! — *this brave o'erhanging firmament, this majestical roof fretted with golden fire*, why, it appears no other thing to me than a *foul and pestilent congregation of vapors*.”

Macbeth says his hand, never to be cleansed from blood, will rather

“ The multitudinous seas incarnadine,
Making the green one red.”

It would be a miracle if such a writer were obscure. His page has been begrimed and covered with dark spots, only through the rough handling it has received.

It may well be that the restoration of the true text, though it dissipates the obscurity of a passage, will seem to lessen its poetical effect, as darkness is one source of the sublime. Even this result is not much to be deplored. Shakespeare will not lose much, if only that portion of his poetry is taken away in which we can with difficulty spell out a meaning. Critics of the German school have used a great deal of cant on this subject, as if there were an esoteric significance in many expressions, not to be deciphered by people of common understand-

ing. They forget that the mighty master belonged himself to the people, and wrote for the people. It would almost seem as if they prized the sense of any passage only in proportion to the difficulty of getting at it. In many lines, which are simply corrupt, they have, after their stupidly profound fashion, discovered a world of meaning. According to their apprehensions, Shakespeare is like Hudibras, who

“could not ope
His mouth, but out there flew a trope.”

However misplaced or senseless the expression may seem to ordinary readers, they can discover some remote analogy in it, some glimpse of a hidden truth, or some erratic flight of the imagination, to which they cling with all the more earnestness, as it is not visible to eyes profane. Then comes the MS. Annotator, and, by restoring a letter which had dropt out, or altering the collocation of a word or two, reduces the passage to plain narrative, or simple prose, and they cry out, —

“Pol, me occidistis, amici,
Non servastis, . . . cui sic extorta voluptas,
Et demptus per vim mentis gratissimus error.”

We cannot sympathize with them in their affliction. However prone Shakespeare is to the use of figurative language, it will not surely be denied that he uses words in their literal, at least six times as frequently as in a metaphorical, meaning. It follows, then, that an emendation of the text, which in clearing up an obscure passage, reduces a figurative expression to a literal one, is at least six times as probable as a different suggestion, which does just the reverse. So, also, while we admit that Shakespeare's lines are often left, designedly or carelessly, unrhythmical and unmetrical, it is certain that his versification is far more frequently regular than irregular; and therefore, to say the least, there is no presumption against a newly proposed reading, in that, while it dissipates obscurity or completes the sense, it also pieces out an imperfect verse, or restores smoothness to a halting one. Keep these observations in mind, and at least half of the criticisms which have been made upon the work of the MS. Annotator cease to have any weight whatever.

We have already spoken of the erroneous principles of what

may be called the antiquarian and bibliomaniac mode of amending or criticising the text of Shakespeare. Mr. Dyce's volume abounds with mistakes of this class, of which we can cite only the following instance. In the third act of the Comedy of Errors, Antipholus of Syracuse says to Luciana, —

“Far more, far more, to you do I [decline] *incline*.”

The MS. Annotator tells us to substitute *incline* for *decline*, which is the reading of the folio; and Mr. Dyce thus objects to the emendation.

“The manuscript corrector merely substituted a word more familiar to himself and those of his time than ‘decline.’ That the latter is what Shakespeare wrote, is not to be doubted: compare Greene. ‘That the loue of a father, as it was royall, so it ought to be impartiall, neither *declining* to the one nor to the other, but as deeds doe merite.’ — *Penelope's Web*, sig. G 4, ed. 1601.”

As only one authority is here cited for the use of the word with this unusual signification, we cannot help suspecting that in Greene's text, as well as in Shakespeare's, “*declining*” was substituted for “*inclining*” by a mere error of the press. But however this may be, every one will admit that it is safer to try and ascertain what Shakespeare wrote from Shakespeare himself, than from Greene. Turning to Mrs. Cowden Clarke's Concordance, we find about twenty instances in which “*incline*” is used in its present ordinary signification. We select the following cases: —

“I more *incline* to Somerset.” — *Henry VI*.

“If he would *incline* to the people.” — *Coriolanus*.

“We must *incline* to the king.” — *Lear*.

“Would Desdemona seriously *incline*.” — *Othello*.

Using the same convenient guide, we find some twenty cases more in which “*decline*” appears in what is now its usual meaning, and not one instance, except the very case now in question, to the contrary. Take the following examples: —

“Who thrives, and who *declines*.” — *Coriolanus*.

“At the height, are ready to *decline*.” — *Julius Cæsar*.

“Spare speech: *decline* your head.” — *Lear*.

“A great name should *decline*?” — *Henry VIII*.

In view of these cases, we presume even Mr. Dyce will admit

that it "is not to be doubted" that the proper word is "*incline*." In his bibliomaniac ardor, he overlooked thirty or forty undeniable examples, which were close under his eyes, for the sake of quoting one doubtful case from a book which nobody but an antiquarian ever heard of.

But our remarks have already extended to an inconvenient length, and we must here leave the discussion of a fascinating topic. Our purpose has been, throughout, not so much to vindicate the great importance of Mr. Collier's discovery, as to show the causes why it has been so vehemently assailed, and the false principles of criticism which have been applied, in this case and in many others, to the examination of Shakespeare's text. But the question will finally be decided by the sure instinct of the public taste, which, we cannot doubt, will soon reverse the sentence of the present generation of editors, critics, and commentators, and finally incorporate into the received text far the larger portions of the emendations made by a poor player in the first half of the seventeenth century.

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